DOCUMENT RESUME

ED 121 017 EC 082 549

AUTHOR Erskine, Richard G.; And Others
TITLE Autism and Childhood Psychosis: Annotated Bibliography 1969-1974.
INSTITUTION Illinois Univ., Urbana. Dept. of Special Education.
PUB DATE Jan 75
NOTE 175p.

EDRS PRICE MF-$0.83 HC-$8.69 Plus Postage
DESCRIPTORS Annotated Bibliographies; *Autism; *Bibliographies; Clinical Diagnosis; Drug Therapy; Emotionally Disturbed; Etiology; Exceptional Child Research; *Identification; *Intervention; *Psychosis; Psychotherapy; Research Reviews (Publications)

ABSTRACT

The annotated bibliography contains approximately 400 citations of articles (1969-1974) on autism and childhood psychosis. It is explained that material was drawn from medical, psychological, social service and educational sources. Entries are arranged in separate sections for autism and childhood psychosis and are presented alphabetically by author's name within the following headings: diagnosis, descriptive study, etiology (general and integrative, non-organic, and organic), and treatment (psychodynamic approaches, behavioral approaches, chemotherapy, and varied approaches). Citations usually include author's name, title, source, date, pagination information and a brief abstract. (CL)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED121017

AUTISM
AND
CHILDHOOD PSYCHOSIS

ANNOTATED BIBLIOGRAPHY
1969-1974

RICHARD G. ERSKINE
LEONARD E. CLEARY, JR.
ELLEN C. JOHNSON

DEPARTMENT OF SPECIAL EDUCATION
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
URBANA, ILLINOIS

EC082549

ED121017

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

AUTISM AND CHILDHOOD PSYCHOSIS:

ANNOTATED BIBLIOGRAPHY 1969-1974

Prepared By

Richard G. Erskine

Leonard E. Cleary, Jr.

Ellen C. Johnson

ED121549

PREFACE

The tremendous volume of expanding literature pertaining to children with severe learning and emotional/behavioral deficits is indicative of the growing concern for the education and treatment of the severely handicapped child. While the trend within Special Education is toward the development of a suitable educational environment in public school classrooms for every child, there will remain a few for whom mainstreaming will not be a suitable approach. The second half of the 1970s will be a time when educators and psychological researchers will broaden the search for effective educational and treatment approaches for those children whose severe learning and behavioral deficits currently preclude their taking their place within the mainstream with their peers.

The rapid expansion of the literature on severe childhood disorders makes it even more difficult for individual investigators to keep informed of recent developments. In addition, the flux within this field regarding nomenclature increases the difficulty of keeping abreast of findings related to a particular behavioral syndrome or in comparing one study with another. Some articles use a categorical label and imply a very specific set of behaviors while other articles use terms such as autistic, autisan, psychotic, or schizophrenic loosely and interchangeably.

This annotated bibliography was prepared to facilitate the dissemination of recent findings and contains over 400 abstracts of articles (1969-1974) on autism, childhood psychosis, and related disorders. No work of this type ever succeeds in including all relevant references. In our search of this literature we have, however, attempted to pull together the relevant publications from medical, psychological, social service, and educational sources available to us. The broad range of articles includes those published in the popular press and some which are highly technical. We have attempted to include all schools of thought, from the psychogenic to the organic causes and all approaches to treatment from the psychoanalytical to behavioral to chemotherapy. We did not attempt to annotate books.

Our objectives was to assemble a collection of annotated articles which would aid the researcher, the teacher, or the parent in their quest for answers to the perplexing questions regarding etiology and treatment of autism and childhood psychosis.

This collection of annotations began as a class project in a graduate course on autism and childhood schizophrenia which I taught at the University of Illinois at Urbana-Champaign. The impetus for conceiving the project and the initiation of the early search for references was a direct result of the interest students showed in learning the latest developments in the field. Thanks to: Susan Hutchison, Lynda Jacobs, Susan Lite, Anne Olmstead, Robert Schwartz, Ronald Texley, Katherine Wirsing and Marge Paloian for their support and help.

Particular recognition and thanks to Leonard E. Cleary, Jr. for his superlative technical skills and Ellen C. Johnson who worked tirelessly long after the course was over to make this project a success. Shirley Marino deserves a note of thanks for the reams of typing and retyping necessary to finalize this publication.

January, 1975

Richard G. Erskine, Ph.D.
Assistant Professor
University of Illinois at Urbana-Champaign

Previously published annotated bibliographies on autism and childhood schizophrenia:

Goldfarb, W., & Dorsen, M. Annotated bibliography of childhood schizophrenia and related disorders. New York: Basic Books, 1956.

Tilton, J., DeMyer, M., & Loew, L. Annotated bibliography on childhood schizophrenia: 1955-1964. New York: Grune and Stratton, 1966.

Bryson, C. Q., & Hingtgen, J. N. Early childhood psychosis: infantile autism, childhood schizophrenia and related disorders, an annotated bibliography. Rockville, Md.: National Institute of Mental Health, 1967.

TABLE OF CONTENTS

	Page
CHILDHOOD PSYCHOSIS	
Diagnosis	1-8
Descriptive Study	8-22
Etiology	
General and Integrative	22-27
Non-Organic	27-36
Organic	36-44
Treatment	
Psychodynamic Approaches	44-48
Behavioral Approaches	49-56
Chemotherapy	57-60
Varied Approaches	61-63
AUTISM	
Diagnosis	64-73
Descriptive Study	74-101
Etiology	
General and Integrative	102-105
Non-Organic	106-111
Organic	112-124
Treatment	
Psychodynamic Approaches	125-140
Behavioral Approaches	141-159
Chemotherapy	160-161
Varied Approaches	162-169

CHILDHOOD PSYCHOSIS

CHILDHOOD PSYCHOSIS: DIAGNOSIS

Aug, R. G. Childhood psychosis: a review of the syndrome. The Journal of the Kentucky Medical Association, 1970, 68, 362-366.

The author discusses the reasons for the differing viewpoints on childhood psychosis. By taking common elements from the variety of available descriptions of childhood psychosis, those condisered pathognomonic are set forth. These "cardinal symptoms" which are enumerated and briefly described are those necessary and sufficient for the diagnosis of childhood psychosis. "Non-specific" symptoms which are frequently present in childhood psychosis but are neither necessary nor sufficient for the diagnosis are also presented.

Although the author emphasizes the difficulty of making a differential diagnosis for childhood psychosis, he concludes by stating that diagnosis can always be made on the basis of the "5 cardinal symptoms." He does not support this statement with any experimental application of his method.

Aug, R. G., & Ables, B. A. A clinician's guide to childhood psychosis. Pediatrics, 1971, 47, 327-338.

This paper is a useful compendium of various childhood psychoses designed primarily for the pediatrician who encounters the vast array of definitions and conflicting descriptions. It attempts "to give a didactically useful formulation of childhood psychosis." Differential diagnosis of Early Infantile Autism, Symbiotic Psychosis and Childhood Schizophrenia are discussed in relation to observations of mental retardation, behavior syndromes of minimal brain damage, conditions of delayed or absent speech, hyperactivity and "other" deviant conditions.

The authors also compare different theories of etiology and psychopathology of childhood disorders. Treatment methods are not reviewed, instead the reader is referred to a book by W. Goldfarb (A Time to Heal).

Chacko, R. Childhood psychoses. Indian Pediatrics, 1970, 7, 402-405.

The purpose of this article is to inform medical doctors of the psychoses of childhood so that misdiagnoses of mental deficiency would be made less often. Descriptions of the theories of Bender, Kanner, and Mahler are included. Also discussed are the major behavioral characteristics of children suffering from autism and childhood schizophrenia. The article provides an adequate and brief overview of the subject.

De Myer, M. K., Churchill, D. W., Pontius, W., & Gilkey, K. M. A comparison of five diagnostic systems for childhood schizophrenia and infantile autism. Journal of Autism and Childhood Schizophrenia, 1971, 1, 175-189.

The article provides a useful summary and comparison of diagnostic scales developed by Rimland, Rolan and Spencer, Lotter, and the British Working Party. The authors' diagnostic system, based on clinical interviews, uses Kanner's autism criteria with schizophrenia differentiated by periods of normal relatedness and emotional dependency along with communicative but bizarre speech patterns. While all five systems separate psychotic from nonpsychotic children, only the De Myer-Churchill and Rimland systems differentiate autistic from schizophrenic syndromes.

The authors state that subdivision of psychosis is important but that our present knowledge in the area may not warrant differential diagnosis.

Denny, J. E. Experiment analysis of the interactional behavior of severely disturbed children. Dissertation Abstracts International, 1971, 32b, 555.

Analysis of variance techniques were used to differentiate autistic, mentally retarded, schizophrenic and normal classifications on variables derived from observation of children's interactions with familiar and unfamiliar adults. Ten children from each diagnostic category were used as subjects. Four variables were found to have significant difference among groups, two for verbal behavior, while the others dealt with eye contact and "physical object play." On a continuum from adaptive to maladaptive, the autistics tended to fall on the maladaptive extremes, while schizophrenics, retarded and normal groups in that order, advanced toward the adaptive end.

The author stated that the continuum developed provides an objective means of comparing individual and group behaviors on quantitative scales.

Finch, S. M. Nomenclature for children's mental disorders need improvement. International Journal of Psychiatry, 1969, 7, 414.

In this critical evaluation of the American Psychiatric Association's revision, DSM-II (Diagnostic and Statistical Manual, Mental Disorders), the author asserts that although the section on mental retardation is an improvement, the section on psychiatric disorders is "ridiculous" and "unscientific." He cites reasons for the improvement of the nomenclature under mental retardation, and then briefly questions the use of terms like "runaway reaction" and "group delinquent reaction."

Fish, B. Limitations of the new nomenclature for children's disorders. International Journal of Psychiatry, 1969, 7, 393-395.

The author states that the American Psychiatric Association's revision, DSM-II (Diagnostic and Statistical Manual, Mental Disorders) is an improvement compared to DSM-I. However, she believes that the section pertaining to behavioral disorders needs to be expanded by adding developmental symptoms to the primary diagnosis because children's disorders are diagnosed while they are developing.

Hagen, J. W., Winsberg, B. G., & Wolff, P. Cognitive and linguistic deficits in psychotic children. Child Development, 1968, 39, 1103-1117.

In this experiment psychotic children were compared with normal children on tasks of short-term memory and perceptual discrimination in order to determine the type of deficit which mediates the abnormal behavior of the psychotic. A brief informative review of research concerning verbal mediation in memory and discrimination provided a basis for conclusions and implications from the results of this study. Since the psychotic children performed significantly worse on all discrimination tasks and other tasks in which language facility is involved, the performance varied with language ability.

It was stated that language dysfunction may be a central factor to the symptomatology of childhood psychosis. Possibilities for further study to prove or disprove this hypothesis were offered.

Henny, R. The infantile psychosis. Psychologie Médicale, 1972, 4(6), 1249-1252. (From Psych Abstracts, 1974, 51, #5330, p. 669)

The author defines infantile psychosis and labels two main groups; children suffering from fundamental difficulty related to the self and those with a distrubed perception of reality. Developmental processes of these conditions are discussed.

Jenkins, R. L. Classification of behavior problems in children. American Journal of Psychiatry, 1969, 125, 1032-1039.

Jenkins outlines the problems of treating patients within each of the groups designated by DSM-11 (Diagnostic and Statistical Manual of Mental Disorders). Describing each group--hyperkinetic reaction, withdrawing, reaction, overanxious reaction, runaway reaction, unsocialized aggressive reaction, group delinquent reaction and "other" (miscellaneous) reaction, he concludes that the six reactions "represent clinically recognizable symptomatic clusters supported by different studies using different cluster methods."

Jenkins stresses the need for individualized treatment of all children, but suggests that it is advantageous to "individualize" treatment from a "general pattern" appropriate to the child's general type of problem.

Kolvin, I. Studies in the childhood psychoses: I. diagnostic criteria and classification. British Journal of Psychiatry, 1971, 118 (545), 381-384.

Three major groups of psychoses were distinguished by their age of onset: under 3 years, 3-5 years, and over 5 years. Diagnostic criteria were proposed for the under 3 year group and over 5 year group based on the work of Kanner and Creak for the first, and Fish (adult schizophrenia) for the latter group. This article served as an introduction to several studies which test the value of distinction by age of onset and establish the frequency of of occurrence of the different signs in the different clinical groups, leading to discriminants for differential diagnosis.

Kolvin, I., Ounsted, C., Humphrey, M., & McNay, A. The phenomenology of childhood psychoses. British Journal of Psychiatry, 1971, 118, 385-395.

Eighty children were studied and classified as infantile psychoses (IP) if illness onset was before 3 years old; late onset psychoses (LOP) if onset was later than 5 years. The LOP group showed disorder of form, thought content, stream of thought and hallucinated auditorily. The IP group showed none of those symptoms but had severe speech delay and echolalia; were unresponsive to pain; overactive; aggressive toward the self; and avoided gaze of others.

Problems of accurately assessing the presence of these and other clinical phenomena are discussed. When symptoms in each group were ranked according to frequency of occurrence, certain symptoms became clearly diagnostically discriminant. It was concluded that without a clear history, LOP cases with simple schizophrenic pictures may be confused with IP cases of the same age.

Lachas, D. The development of a childhood psychosis scale, using the personality inventory for children (PIC). Dissertation Abstracts International, 1971, 31(7-8), 4340.

This study investigates whether a Childhood Psychosis (Ch Py) scale could be developed for the Personality Inventory for Children (PIC), which would discriminate psychotic from normal, retarded and general clinic children. Two scale construction procedures were attempted: 1) contrast of normal and psychotic test protocols, and 2) selection of the most valid items obtained by a normal-psychotic. Though both scales displayed ability to differentiate psychotic from other samples, the 40 item scale constructed by the second procedure was selected as the final Childhood Psychoses (Ch Py) scale. It was found that the Ch Py scale can realistically be used as a routine screening device.

Schopler, E., & Reichler, R. How well do parents understand their own psychotic child? Journal of Autism and Childhood Schizophrenia, 1972, 2(4), 387-400.

This article attempts to change professional attitudes toward parents of psychotic children. The authors' contend that parents can reliably assess their psychotic child's level of development and current abilities in contrast to the more traditional view of parental inadequacy.

Forty-two fathers and 45 mothers were asked to estimate their child's level of functioning and overall development. When these findings were compared to more standard tests (Merrill-Palmer, WISC, Social Maturity Scale, etc.), the correlations were statistically significant, with parents of more severely disturbed youngsters having the highest correlation.

Implications include the feasibility of using parental assessment as a possible substitute for standardized testing when testing is impossible and the necessity for professionals to listen and act when concerned parents believe their children are disturbed instead of dismissing them as "over-anxious."

Silver, L. B. DSM-II and child and adolescent psychopathology. American Journal of Psychiatry, 1969, 125, 1267-1269.

The author critiques the second edition of the Diagnostic and Statistical Manual of Mental Disorder (DSM-II), specifically the section on "Behavior Disorders of Childhood and Adolescence." He contends that the diagnoses described in this section are based purely on overt behaviors and do not reflect etiology, psychopathology, prognosis or indicated treatment. A classification system is suggested based on work of the group for the Advancement of Psychiatry utilizing the following labels: 1) Healthy Responses, 2) Reactive Disorders, and 3) Developmental Deviations.

CHILDHOOD PSYCHOSIS: DESCRIPTIVE STUDY

Alvarez, W. C. Some psychoanalysts who blame the family. Journal of Schizophrenia, 1968, 2, 1-2.

The author related several cases in which the parents of disturbed children have been in his opinion, unjustifiably blamed for the psychosis of their children. Although he related his cases superficially, he did achieve his purpose in pointing out the need for psychiatrists to consider the hereditary factors which might be contributing to the psychosis of their patients.

Aurnhammer-Frith, U. Emphasis and meaning in recall in normal and autistic children. Language and Speech, 1969, 12(1), 29-38.

This study investigates the effects of syntactic and phonological structure on immediate recall and their relationship to the autistic child's failure to use language patterns. An analysis was made to test the assumption that autistic children do not code or re-order words as they are learned, but rather echo, causing reversals and substitutions. Thirty-two autistic (Creak) and 16 normal controls matched on Digit Span were read word lists and recall ability was measured.

Results indicate that increased development occasions a change from dependence on external phonological structure to an increasing reliance on syntactic structure which is less pronounced in autistic than for normal children. Also indicated is autistic children's deficiency in appreciation of language's sequential structure but normal appreciation of phonological structure.

It is suggested that in psychotics, the inability to make use of syntactic structure in a meaningful context represent a basic deficiency which tends to confirm earlier findings that autistic children show lack of patterning.

Bauduin, A. The sense of identity in "limited states": Case study of a prepsychotic child in the latency period. Evolution Psychiatrique, 1971, 36, 4, 725-764. (From Psych Abstracts, 1974, 51, #3301, p. 402).

The author presents a case study of a seven-year-old prepsychotic male. In describing his treatment intervention, seven phases the child went through are discussed and the author concludes that the boy was suffering from nervous tension which resulted in his questioning his own existence in which he had never acquired a definite belief.

Beisset, A. R., Glasset, N., & Grant, M. Psychosocial adjustment in children of schizophrenic mothers. Journal of Nervous and Mental Disease, 1967, 145(6), 429-440.

Objective and reliable information was gathered about the range of adjustment in children of schizophrenic mothers. The hypothesis was that children of mothers with a history of diagnosed schizophrenia will show greater signs of behavioral maladjustment than will comparable groups of children from psychiatrically undisturbed or less disturbed mothers. More children growing up in a home with a schizophrenic mother showed evidence of emotional and behavioral disorders than did children with normal mothers. A wide range of adjustment in these children extending from behavioral disorder to mental health was demonstrated. The findings showed that there are many well adjusted children who come from homes with a psychotically disordered mother, nearly as many as come from homes with normal mothers. Reference is made to manipulating a child's environment to insure a mentally healthy upbringing.

Bender, L. The life course of schizophrenic children. Biological Psychiatry, 1970, 2, 165-172.

The author defines infantile autism as a type of childhood schizophrenia which develops in infancy and early childhood. She identifies other kinds of childhood schizophrenia according to the age of onset. In this study of the life course of 100 individuals, all types of schizophrenia are included. Favorable and unfavorable circumstances associated with prognosis are discussed as well as a complete description of the subjects' backgrounds. Follow-up information included test scores, living situation, vocation, and kind of support required. All subjects continued to be recognized as dependent schizophrenics throughout their lives.

Some basic differences in the life course which correlated with the kind of schizophrenia exhibited were also discussed.

Bender, L. The life course of children with schizophrenia. American Journal of Psychiatry, 1973, 130, 783-786.

This paper describes a follow-up study of 100 of 626 children who were diagnosed as schizophrenic from 1935 to 1952. The study reviews the background, hereditary data, history of organic stress, intellectual development, types of treatment and the outcome of 100 subjects who are now between 25 and 50 years old. It is concluded that childhood schizophrenia, including autism, is an early decompensation in a generally vulnerable individual. The author's statistics show that only about one-third of schizophrenics make even a tenuous social adjustment.

Block, J. Parents of schizophrenic, neurotic, asthmatic, and congenitally ill children. Archives of General Psychiatry, 1969, 20(6), 659-674.

A comparative study which evaluates specific personality differences and psychopathologies among sample parents of schizophrenic, neurotic, asthmatic, and congenitally ill children is presented. The study compares these parents on a number of psychological dimensions, with particular emphasis on theoretical conceptualizations of parents offered by clinicians. Six groups and categories of parents were developed and used to present the results.

Empirical evidence and theoretical descriptions of parents are shown to be reasonably constant with each other. Results also suggest that psychogenic factors are significantly associated with psychological symptomatology.

Brackenridge, C. Failure to detect a synergist for pentylenetetrazol in the blood of psychotic children. International Journal of Neuropharmacology, 1968, 8(3), 309-315.

This study attempted to confirm reports in the literature pointing to a substance in the blood of psychotic children as a possible factor associated with psychiatric disorders. Subjects were 25 psychotic children ages six to seventeen who were diagnosed on the criteria established by the Working Party (1961) concerned with severely disturbed children.

The authors injected mice with pentylenetetrazol (PTZ), a seizure inducing agent, and recorded baseline rates on number and intensity of seizures following injection. In phase two, blood plasma from the subjects was injected into the mice at intervals prior to PTZ injection and level and intensity of pursuant seizures were recorded.

Results of this test and similar tests with minor variations allow no definitive conclusions concerning possible presence in the blood of psychotic children of agents causing psychiatric disorders and seizures.

Bryson, C. Short-term memory and cross-modal information processing in autistic children. Journal of Learning Disabilities, 1972, 5, 81-92.

The author examined and compared short-term memory and auditory-visual processing in seven children under twelve years of age and diagnosed autistic or schizophrenic.

After exposure to four types of tests, visual-visual and auditory-visual matching tests and visual-visual and auditory-visual delayed frequency tests, the tested children showed a perceptual disability exemplified by difficulties with cross-modal and short-memory tasks. The author suggests that these problems rather than emotional ones might explain the disrupted interpersonal patterns of these children.

Cain, A. C. Special "isolated" abilities in severely psychotic young children. Psychiatry, 1969, 32, 137-149.

The author emphasizes the importance of investigating the special abilities exhibited by some psychotic children. The wide range of abilities demonstrated in 10, 3-1/2 to 10-year-old children diagnosed as early autistic or symbiotic, included fine motor coordination, general coordination, visual and aural memory, vocabulary, music, math , mechanics and others. In a review of previous works the author presented varying explanations for these special abilities. The variables which must be accounted for in a study of this phenomenon as well as the methodological problems which it presents were discussed.

Chatterjee, T. K. A study of the personality of the parents of the schizophrenics. Samiksa, 1969, 23(1), 22-48.

Studying the pathogenic role of the parent-child relationship in the development of schizophrenia, the author reviews several theories of schizophrenia and the development of personality. He states that personality formation depends on experiences of infancy when the child interacts mainly with the parents or parent-surrogates and supports that position with a review of important literature concerning the parent-child relationship.

The personalities of the parents of schizophrenic children are explored in a matched design using projective tests and interviews with a group of normal parents serving as a control group. The results indicate that the parents of schizophrenic children do have distinctive personality traits and it is suggested that certain reactions by schizophrenic children can be explained by the trait-characteristics of their mothers. The author felt that as environmental and situational factors should also be investigated. He concludes by listing specific characteristics of parents, both mothers and fathers, of schizophrenic children.

Cunningham, M. A. A comparison of the language of psychotic and non-psychotic children who are mentally retarded. Journal of Child Psychology and Psychiatry, 1968, 9, 229-244.

The goal of this study was to determine the possible abnormalities in the speech of psychotic children using a systematic analysis of taped speech. The results of the study, which reflected an effort to catergorize language into meaningful areas, showed that the language of retarded psychotic children was different in several ways from that of non-psychotic retarded children. Unique characteristics of the psychotic children's language include a dearth of informative speech and excesses of non-communicative speech and demanding or emotionally toned speech. These results were examined from the view of reinforcement theory and from Piaget's intellectual development theory.

Cresnowicka, M. Anal and language difficulties in the treatment of a child: An attempt to understand nonverbal communication. (French) Revue Francaise de Psychoanalyse, 1973, 37, 109-114. (From Psych Abstracts, 1974, 52, #3785, p. 479.)

The author presents a case study of a prepsychotic seven-year-old boy whose problems in defecating and reading and writing have been psychoanalyzed. Over a 15-month analysis program, the boy's refusal to defecate, indicating unresolved conflicts, and his refusal to read or write are examined. Transference is discussed in terms of the nonverbal relationship which was established between the therapist and child.

Czudner, G., & Marshall, M. Simple reaction time in schizophrenic, retarded and normal children under regular and irregular interval conditions. Canadian Journal of Psychology, 1967, 21 (5), 369-380.

This study on reaction-time replicated, with minor modifications, Rodick and Shakow's (1940) study, "Set in the schizophrenic as measured by a composite reaction time index." The subjects were 20 schizophrenic, 20 retarded, and 20 normal children. Regular and irregular preparatory interval conditions were used to obtain results. The results generally support the postulation that schizophrenic children are unable to maintain a major set. The study suggests that there is very little relationship between intelligence and the psychological deficit demonstrated in the experiment. The authors suggest the need for further investigation to study the problem of set and attention among mentally ill, retarded, and normal children.

Elkisch, P. Non-verbal, extra-verbal, and autistic communication in the treatment of a child tiqueur. The Psychoanalytic Study of the Child, 1968, 23, 423-437.

The author describes the case of Kenneth, a schizophrenic with a severe tic syndrome, in order to demonstrate how communication can be established when the faculty of intelligible speech is impared or absent or when language is used in a non-communicative way. The article describes the background and behavioral characteristics of the boy as indicated through drawings and dreams. These are evaluated in an analytical manner.

Since the actual therapeutic techniques used and the actual language development shown were not delineated, the stated purpose of the article was not fulfilled.

Green, A. H. Self-destructive behavior in physically abused schizophrenic children. Archives of General Psychiatry, 1968, 19, 171-179.

This study was completed to ascertain the occurrence of self-mutilation in schizophrenic children related to prior histories of physical abuse. Case histories of 70 school-age schizophrenic children were investigated and a complete description of the child, his parents and in particular the mother's mother, is given in those case studies.

The results demonstrate that early physical abuse is a forerunner to later self-destructive behavior and that it may enhance the development of pain dependent behavior. Because the physical abuse occurred within an environment of rejection and stimulus deprivation, the author states that the abuse compensated for the lack of tactile and kinesthetic stimulation. To gain further knowledge of this phenomenon, the author suggests a study of self-destructive behavior in non-schizophrenic children.

Green, A. H. The effects of object loss on the body image of schizophrenic girls. American Academy of Child Psychiatry Journal, 1970, 9 (3), 532-547.

The author cites case histories of several schizophrenic girls and discusses their various obsessions, attachment to objects, and reactions to the loss of these objects. Specific patterns of early childhood which might have prompted their bizarre behavior (i.e. pronounced difficulties in the earliest relationship with her mother, etc.) are presented. Discussion follows concerning schizophrenic children's reactions to the life around them and how they attempt to adapt to shifts in their personal situations through elaborate defense mechanisms.

Much of the article concerns itself with psychodynamic interpretation of penis-envy and general sexual identity problems.

Havelkava, M. Follow-up study of 71 children diagnosed as psychotic in preschool age. American Journal of Orthopsychiatry, 1968, 38, 846-857.

Forty-two treated and twenty-nine untreated, 8- to 17-year-old psychotic children's progress was followed for 4 to 12 years. The diagnostic criteria used were Kanner's (infantile autism) and Bender's (autistic and pseudoneurotic forms of schizophrenia). It was suggested that the subjects progressed from autistic to schizophrenic which postulates these illnesses as phases in a process. Treatment was individual therapy in a playroom situation for one to two years with an ultimate goal of regular nursery school placement.

The impression of this follow-up report is that psychosis results in ultimate intellectual deficit of varying degrees. Early treatment however, results in a better chance of the child's utilizing his potential. It was further suggested that maturation had a more profound effect than treatment in decreasing autism.

Hingtgen, J. N., & Bryson, C. Q. Recent developments in the study of early childhood psychoses: infantile autism, childhood schizophrenia, and related disorders. Schizophrenia Bulletin, 1972, 5, 8-54.

The article reviews over 350 references regarding the early childhood psychoses of infantile autism, childhood schizophrenia, and related disorders. Of special interest is a chart comparing characteristics that Kanner; Polan and Spencer; Creak; Goldfarb; Rimland; White, DeMyer, and DeMyer; Wolff and Chess; Alderton; Lotter; Ruttenberg; Lotter; O'Gorman; Rutter and Lockyer, attribute to these children. Brief summaries concerning research on the prevalance, onset, family characteristics, follow-up studies, intelligence, language, perception, neurobiological studies, treatment, theory, and current status are also given.

Jackson, N. Sex and dominance cues in good-poor premorbid schizophrenia. Journal of Abnormal Psychology, 1970, 75, 1, 78-82.

This study attempts to clarify the dispute in the literature concerning the premorbid (prior to onset of disease) importance of parental dominance versus sexual gender cues. Male schizophrenics (60 rated as having good, 60 as having poor premorbid adjustment) heard three tape recordings of a male and female voice in conversation. In tape one, the female was dominant; in tape two the male; in tape three there was no difference.

Reliability of figure dominance, voice gender, and situation reality was dealt with in the study's design. To check subjects' responses in the absence of tapes, exercises were given in discriminating geometric designs after parental figures made selections.

Results showed that "poor" subjects were more influenced by maternal cues irrespective of dominance. "Good" subjects attended more to dominance cues.

Kanner, L. Childhood psychosis: a historical overview. Journal of Autism and Childhood Schizophrenia, 1971, 1(1), 14-19.

A sketchy outline of the history of childhood psychosis is presented. Scientists such as Maydsley (1867), DeSantis (1943), Mahler and Turer (1949), Goldfarb (1956), Bender and Rank (1950's) are mentioned briefly as contributors to the general description of childhood psychotic behavior. A complete chronicle remains to be written, and the author states, is best reserved for a future data.

Krishnamurthy, K. Psycholinguistic study of a schizophrene's speech. Language and Speech, 1969, 12, 4, 256-267.

Reflecting an increased general interest in speech analysis and phonological interpretations, the author reports a method for preparing, editing, and transcribing phonologically true texts of speech samples of six mental patients. Two listeners carefully transcribed tapes of speech sample, including all recorded utterances. One specific tape, with its method of transcription is discussed in detail.

In the process of explaining the methods of transcription, considerable information is conveyed to the reader concerning the general field of phonological interpretations and how a particular subject's speech pattern provides clues useful for understanding behavioral problems.

Lane, E., Albee, G., & Doll, L. The intelligence of children of schizophrenics. Developmental Psychology, 1970, 2, 315-317.

The authors examined the influence of schizophrenic parents on the intellectual development of their children. No deleterious effects of schizophrenic parents on the intellectual development of the child were evidenced when the IQs of 262 children of schizophrenics were compared to the childhood premorbid scores of their 129 schizophrenic parents.

The children's IQs were higher than those of their parents and children of the same sex as their schizophrenic parents performed no worse than children of the opposite sex. Children with schizophrenic mothers performed better than those with schizophrenic fathers.

A very vague discussion of the regression effect is included in this study.

Lockyer, L. & Rutter, M. A five to fifteen year follow-up study of infantile psychosis. II. British Journal of Psychiatry, 1969, 115(2), 865-882.

The authors report a 5 to 15 year follow-up study of 63 children with infantile psychosis and 63 control children attending the same clinic and closely matched for age, sex, and IQ.

The relationship between intellectual development and psychosis, and the value of an IQ score in assessing current levels of functioning to predict later progress was investigated.

The study indicated that the IQ is a useful predictor on both functions. The correlation between the IQ score at admission and score at follow-up was significant.

Masagatoni, G. N. Hand gesturing behavior in psychotic children. American Journal of Occupational Therapy, 1973, 27, 24-29.

The hand gesturing behavior of eighteen hospitalized psychotic children, ages 2-1/2 to 13 years, was observed for nearly fifteen months. Sixteen of the children showed abnormal unique fixed patterns of hand gestures.

The literature review concluded that hand gesturing may be a manifestation of delayed or irregular development and/or psychological problems. The author suggests that hand gesturing has significant evaluation and treatment implications, and recommends further study to determine their implications.

Some technical terms are used in the article, but most of it is clearly written and understandable to the layman.

Parker, D. A. The orienting response and performance in psychotic and normal children. Dissertation Abstracts International, 1971, 31(2-B), 6953.

In this study the galvanic skin response (an electrical measurement of changes in body tension) and observational data were used to better understand the behavior of children who had to learn a light-tone discrimination to be rewarded. The subjects were normal children and "patients (children) most of whom had been diagnosed as autistic."

It was suggested that two of the patient-children were negativistic toward the learning situation and therefore their performance did not reflect their real learning. A third patient was considered genuinely confused, not negativistic.

This annotation was made from the abstract of the dissertation, which lacked clarity and may not reflect the value of the study.

Peach, W. Parental academic aspiration level and its reaction to the severity of the emotional disturbance of the child. Dissertation Abstracts International, 1968, 29(4-A), 1135.

Sixty-six subjects were used in a study which attempted to determine whether or not parental academic aspiration level and socioeconomic level affect the severity of disturbance in an emotionally disturbed child.

The socioeconomic level of the parents proved significant at the .05 level in its positive effect on the severity of emotional disturbance in the child. A positive relationship between parental academic aspiration for the child and the severity of the child's disturbance was also determined.

Pollack, M., Woerner, M. G., Goldberg, P., & Klein, D. F. Siblings of schizophrenic and nonschizophrenic psychiatric patients. Archives of General Psychiatry, 1969, 20, 652.

The authors report that siblings, between the ages of 15 and 35, of schizophrenic patients do not differ from those of nonschizophrenic patients in terms of the overall incidence of abnormality. However, 87 more siblings of schizophrenic patients were diagnosed schizophrenic than were siblings of nonschizophrenic patients. Siblings of schizophrenic patients had more often been hospitalized for psychiatric illness than were siblings of nonschizophrenics.

Rolf, J. E. The social and academic competence of children vulnerable to schizophrenia and other behavior pathologies. Journal of Abnormal Psychology, 1972, 80, 225-243.

This study examines the social and academic competencies of four groups of potentially disturbed children (3rd and 4th grades, N=120). Potential adult behavior disturbances are attributed to the children of schizophrenic mothers (group 1), children of internalizing (depressive) mothers (group 2), along with children displaying internalizing (group 3), or externalizing (group 4) childhood disorders. Peer and teacher ratings of these groups are compared with matched and random control groups selected from the same classrooms. There was a variety of sex and rater differences in the reported competencies of the four groups.

The author concluded that precursor signs of vulnerability to adult pathologies are present in childhood and are differentially visible to peer and adult raters.

Sarbin, R. Schizophrenic thinking: a roletheoretical analysis. Journal of Personality, 1969, 37, 190.

The author states that the schizophrenic individual tries to maintain himself through the enactment of certain roles. He feels that researchers need to look at hospitalized schizophrenics as products, resultants or outcomes that arise when labeled by the medical, legal or other professional personnel.

The author infers that the mental hospitals are not designed to help improve cognitive deficits common to this population. Instead, the administration and governing laws of the hospital operate in the direction of assigning roles to disturbed people that are nonreciprocal and nonpersonal.

Sass, E. Judgments of vocal attributes in normal and schizophrenic children. Exceptional Children, 1967, 33, 645-646.

The relationship between vocal attributes and personality in diagnosing childhood schizophrenia and the assessment of such attributes correlated with observer's academic background are explored in this article.

Twenty-two children's voice samples, 11 normal and 11 diagnosed schizophrenic, were played randomly for three groups of judges--21 naive listeners; 21 graduate speech pathology students; and 21 graduate psychology students.

Results showed that there was a difference in vocal attributes of the two groups and that each of the three groups of judges were equal in their ability to locate these differences. The academic background of the listener was found to be non-significant.

Serafica, F. C. Object concept in deviant children. American Journal of Orthopsychiatry, 1971, 41, 473-482.

Children who showed deviant emotional and intellectual development were tested on a scale for visual pursuit (following an object across their field of vision) and permanence of objects (awareness that an object still exists even when it cannot be visualized). These tests were done using the child's favorite toy and several neutral objects for which the child showed no particular preference. The study's findings suggest that deviant children do follow the developmental sequence of "object concept" as formulated by Piaget. The findings also showed that the deviant children manifest a lag in object concept development when dealing with neutral objects, but not when dealing with preferred objects.

Shapiro, T., Fish, B., & Ginsberg, G. L. The speech of a schizophrenic child from two to six. American Journal of Psychiatry, 1972, 128, 1408-1414.

The authors present data on the development of speech in a schizophrenic (possibly autistic) child from age 2 to 6 years. Data analysis indicated increases in comprehensibility and communicativeness with age but at a slower rate than normal children. The authors suggest that early echoing reappears in later speech, tending to make speech vague and bizarre. Later stages of speech are also marked by a predominance of the present indicative tense with a lack of variety of grammatical transformations. The authors relate the identified patterns of speech development to a failure of the ego-identification process.

Shodell, M. J. & Reiter, H. H. Self-mutilative behavior in verbal and nonverbal schizophrenic children. Archives of General Psychiatry, 1968, 19(4), 453-455.

The study measures the incidence of self-mutilating behavior (head-banging, self-biting, scratching, hair-pulling), of verbal and nonverbal schizophrenic children. Based on earlier studies which found self-mutilating behavior occurring in 40 percent of verbal schizophrenic children, it is hypothesized that (1) schizophrenic children who verbalize will show less self-mutilative behavior than nonverbal subjects and (2) verbal ability is related to self control on self-mutilative behavior.

Fifty-eight schizophrenic verbal and nonverbal children, ages four to seventeen, selected from a special day care educational program, were evaluated for verbal ability (Mecham Verbal Language Development Scale) and by teacher report. Teachers and parents were given a questionnaire measuring observed incidence of subject self-mutilating behavior.

Results indicated that self-mutilating behavior occurred significantly more in nonverbal rather than verbal schizophrenic children. The authors suggest that the increased self-mutilating behavior rate of nonverbal subjects may be due to frustration with their educational environment which is structured more for the verbal child. It is also suggested that early speech training would benefit autistic children and that operant conditioning models produce the best results. The authors refer to the subjects in the study as autistic and/or schizophrenic without defining criteria for identification.

Siva-Sanka, D. Biogenic amines uptake by blood platelets and RBC in childhood schizophrenia. Acta Paedopsychiatrica, 1970, 37(6), 174-182. (From MR abstracts, 1972, 9(1227), 148.)

The author discusses findings that show a significant difference in the uptake of serotonin and norepinephrine by thrombocytes and erythorocytes in schizophrenic and non-schizophrenic children.

It was found that autistic children had a lowered uptake of serotonin by platelets and also had a higher ratio of uptake of norepinephrine/serotonin.

Conclusions with disturbed, non-schizophrenic populations were not statistically significant.

Wundheiler, L. N. The significance of nonhuman objects for normal and schizophrenic children. American Journal of Orthopsychiatry, 1972 42, 816-824.

The author investigates the projection of human characteristics on nonhuman objects - anthropomorphism. The contention that anthropomorphism is related to affective needs in schizophrenics is tested using a matched sample of 25 disturbed and normal children (7 yrs., 6 mos. to 12 yrs. 6 mos. of age). Subjects responded to a structured interview covering: physical feelings, emotions about physical feeling, emotion about relationships and expression of emotion and thought. The results indicated that schizophrenic children were more likely to attribute human characteristics to preferred objects than neutral ones. Also schizophrenics tended to form attachment to nonhuman objects for reasons of identification while normal children preferred objects for interest and interaction factors. The author contends that these results show an interaction of cognitive functioning and affective needs in schizophrenics.

Vokan, V., & Luttrell, A. Aspects of the object relationship and developing skills of a "mechanical boy." British Journal of Medical Psychology, 1971, 44, 101-116.

A review of the literature describing man's psychological connection with his machines, is followed by the case report of Jim, an 11-year-old schizophrenic "mechanical boy" who created and used a series of machines while in treatment. The authors analyze the object-relationship aspect of Jim's machines, describing the subject-created machines, and discussing the "multiple meaning" of his involvement with these machines.

Theories of Jim's problem and treatment presented in this article are based on a psychoanalytical interpretation, with the main problem seen as Jim's attempts to reach the Oedipal father and resolve the problem with his pregenital mother.

Zahn, T. P. Word association in adoptive and biological parents of schizophrenics. Archives of General Psychiatry, 1968, 19(4), 501-503.

Thirty words from the Kent-Rosanoff word association list were given to seven pairs of biological parents of schizophrenics and to ten pairs of adoptive parents, who had adopted the child before he was one year old. The parental responses were compared according to the number of original responses, deviance scores, and composit scores.

The results of the first two measures show that the biological parents gave more unusual and deviant word associations. The data confirm findings in a companion study which concluded that there is a greater degree of psychopathology in the biological parents.

CHILDHOOD PSYCHOSIS: ETIOLOGY

CHILDHOOD PSYCHOSIS: ETIOLOGY

GENERAL AND INTEGRATIVE

Carter, M., & Watts, C. A. H. Possible biological advantages among schizophrenics' relatives. British Journal of Psychiatry, 1971, 118, 453-460.

The author cites evidence based on twin studies and case histories favoring an interaction of genetic disposition and environmental factors in the etiology of schizophrenia. This genetic view is contrasted with research indicating a constant rate of occurrence of schizophrenia in the population and a decreased birth rate among schizophrenic parents. The maintenance of the schizophrenic genotype in the gene pool is attributed to some biological advantage among schizophrenics' relatives. Examination of the medical histories and family patterns of schizophrenics' relatives and a matched control drawn from two medical practices indicates a marked decrease in virus infection among schizophrenics' relatives along with a tendency toward fewer accidents, fewer allergies, and increased fertility. The results are mitigated by the small sample size and lack of control for social class.

Bender, L. Alpha and omega of childhood schizophrenia. Journal of Autism and Childhood Schizophrenia, 1971, 1, 115-118.

The author presents a very broad analysis of childhood disorders encompassing schizophrenic, autistic, psychotic and deviant children. Her position posits that a genetic "stream of schizophrenic inheritance" sets up an individual's vulnerability with latter biological and psychological events determining the nature of the effect. This inheritnace factor is viewed as producing both gifted individuals and the classic schizophrenia syndrome. Without further specification of determining factors, this article contributes little to the study of etiology.

Chan, J., Fras, I., Wilson, M. R., & Moeller, H. G. Schizophrenia in infancy, childhood and adolescence. American Journal of Diseases of Children, 1971, 121, 538-542.

The related and overlapping symdromes of childhood schizophrenia including withdrawal, regression, and dissociation are surveyed. Diagnostic criteria used include environmental withdrawal, speech and thought disturbance, mobility alteration, disorientation, preoccupation, retardation, disintegration of body image, resistance to change and anxiety. These criteria help evaluate the course and prognosis of the syndrome. The authors briefly review the historical aspects, incidence (about 1.9% in children under 15 years old), and etiology, concluding that organic, genetic and psychogenic factors all contribute. Prognosis is not correlated with therapy methods utilized, but related directly to age of onset, earliest onset yielding the poorest prognosis.

Dawes, R. M. An unexpected correlate of psychopathology among children of schizophrenic couples. Journal of Psychiatric Research, 1968.

The findings related in this article supported the proposition that social factors are significant in determining which people with a schizophrenic predisposition actually become symptomatic schizophrenics. The data presented showed a relationship between the mother's age at first admission and the children's pathology - the older the mother is on her first admission, the more disturbed the children. The author suggested that interaction with a schizophrenic mother plays an important role in determining whether overt schizophrenia occurs in the offspring.

Kirk, R. V. Perceptual defect and role handicap: missing links in explaining the etiology of schizophrenia. British Journal of Psychiatry, 1968, 114, 1509-1521.

The study proposes that a defect in perception is the cause of schizophrenia and that a handicap in role functioning tends to exacerbate the schizophrenic symptoms. It is hypothesized that a perceptual defect may be caused by genetic factors, brain injury or adverse prenatal conditions. Faulty perception leads to bizarre behavior which is misunderstood and rejected by significant people in the schizophrenic's life. The schizophrenic then withdraws from contact with others or acts out inappropriately. By reviewing current literature a strong case is made in support of viewing schizophrenia as a perceptual defect and role handicap.

Sameroff, A., & Zax, M. Schizotaxia revisited: model issues in the etiology of schizophrenia. American Journal of Orthopsychiatry, 1973, 43, 744-754.

This article is a review of the literature concerning the etiological theories of schizophrenia. The authors discuss the constitutional (genetic) theory, the environmental theory and the interaction model in an attempt to clarify each position and to extract the better points of each. The article deals in theory, is interestingly written, asking more questions than it answers.

Stevens, J. R., & Milstein, V. Severe psychiatric disorders of childhood. American Journal of Diseases of Children, 1970, 120, 182-192.

One hundred children, aged 5 to 16 years, hospitalized for severe psychiatric disturbances were examined by electroencephalogram (EEG). Results of the EEG were statistically correlated with neurological, psychological, historical and sociological data collected on 87 normal control children and 97 hyperkinetic children. The authors found that there were statistically significant relationships between "specific regional and wave-form abnormalities" in the EEG and certain clinical manifestations of psychiatric disorders. Environmental stress was found to be related to psychiatric disturbances only in children with abnormal EEGs.

Medical terms used by the authors are not defined, making the article difficult for the layman to understand.

Wender, P. H. The role of genetics in the etiology of the schizophrenias. American Journal of Orthopsychiatry, 1969, 39, 447.

The author compared the personalities of adults born to schizophrenic parents raised from infancy in foster homes or adoptive homes to a control group which was comprised of children who were born to normal biological parents and reared in foster or adoptive homes to determine the etiology of schizophrenia.

The findings reveal that about 1/3 of the offsprings of the adopted children developed disorders of a schizophrenic character even when they were reared away from their schizophrenic parents.

The author states that the findings strongly implicate genetic factors in the development of "some forms" of schizophrenia. However, they cannot say that all schizophrenics have schizophrenic parents or that all schizophrenics have a genetic component to their illness.

Wolman, B. B. The socio-psycho-somatic theory of schizophrenia. Psychotherapy and Psychosomatics, 1967, 15(6), 373-387.

Sociogenic, psychological, and somatic factors in a theory of schizophrenia are elaborated. Environmental forces are the starting point in the process of schizophrenic dysbalance of cathexes. The interparental and parent-child relationship is given much significance, as well as the resulting confusion of social roles, the child becoming "the protector of his protectors."

The breakdown of the mental apparatus affects the functions of the central and autonomous nervous system. The decline of sensitivity to pain, skin disorders, and other psychosomatic changes can be related to disturbances in the balance of inner cathexes. Successful therapy of schizophrenia must be based on reversal of cathexes; the therapist assuming the role of the protective parent. The patient must feel that he can survive on a conscious level and there is no need to give up the mind for survival.

CHILDHOOD PSYCHOSIS: ETIOLOGY

NON-ORGANIC

Abe, K., & Coppen, A. Personality and body composition in monozygotic twins with an affective disorder. The British Journal of Mental Science, 1969, 115 (524), 777-780.

Psychological, biochemical, bodybuild and body composition characteristics of a series of monozygotic twins, where none, one, or both were diagnosed as suffering from affective disorders were measured. Seven sets of twins were used. In four sets, one twin was ill; in two of the sets both were considered well; in one set both twins were ill.

The study supports the theory that there are constitutional differences in body composition and personality for subjects who develop a depressive illness. However, changes in body water for patients recovering from depression is not a long-term effect but merely a component of the illness.

Asgeirsson, P. Deprivation and progress. Acta Psedopsychiatrica, 1971, 38, 34-40. (Abstracted from Psychological Abstracts, 47, 1972, 5267.)

The author uses a case history to illustrate factors which interact in the formation of childhood psychosis. Developmental spurts combined with stimulus deprivation, an introject personality type and frustration due to threatened separation are some of the critical elements discussed.

Barry, H., & Barry, H. Birth order, family size and schizophrenia. Archives of General Psychiatry, 1967, 17, 435-440.

Birth positions were recorded for over 100 schizophrenics and tabulated separately for each family size. Their frequencies were not randomly distributed: in large families the second half of siblings were overrepresented; in small families, first born men were significantly more numerous than last born.

Some effects of ordinal position were also reversed in different cultures. In large families, the early born were overrepresented in India, the later born in England and United States. Different parental expectations or attitudes might explain these contrasting effects. Although complex psychosocial interactions are involved, a constant relationship was found between family size and birth-order effects in schizophrenia.

Barry, H., & Barry, H. Influence of family size on schizophrenic birth order. Nature, 1969, Aug. 16, 223(5207), 752.

The authors' study concerned the birth position of schizophrenic children in various size families. It is shown that there is little support for the theory that the middle child or next to oldest is usually the schizophrenic child. In fact, it was found that in large families, eight or more children, the last four positions are more susceptible to schizophrenia. Therefore, family size does have an effect on schizophrenics.

Bender, L. A longitudinal study of schizophrenic children with autism. Hospital and Community-Psychiatry, 1969, 20(8), 230-237.

The author states that autism is a defense by withdrawal in a young child who is disorganized and has disturbed patterning and maturational disorders. The resulting anxiety manifests itself in schizophrenia, brain defects and pathology, and other severe traumata. A comparison of 30 autistic schizophrenic children (age 22 to 42 at time of study) who had been included in earlier studies and follow-ups between 1935 and 1952 is presented. Comparisons concerning cultural and religious origins, family characteristics, congenital defects, communication and use of language, and IQ are made. All subjects who presented a picture of autism at two years, show a wide range of schizophrenic disorders in adulthood.

Bleger, J. Schizophrenia, autism and symbiosis: Psychoanalytic viewpoint. Revista de Psicoanalisis, 1973, 30(2), 367-376. (From Psych Abstract, 1974, 52 #1098, p. 141.)

The author contends that schizophrenia may follow autism or clinical symbiosis (therapist and client maintain behaviors that allow them to use one another) and not just autism. The psychotic disintegration of these states may facilitate new learning in the patient.

Cohen, H., Liebowitz, B. A family with twins discordant for schizophrenia: case study. Journal of Projective Techniques and Personality Assessment, 1969, 33, 6, 542-548.

This case study is concerned with the environmental influences on 21-year-old twins, one schizophrenic since his junior year in college, and one showing no schizophrenic tendencies.

Included is a family history and a discussion of the results of psychological tests (TAT, Rorschach, Draw-A-Person) administered to both. The same battery was also given to their mother and aunt--the dominant adults at home.

Although the boys are identical twins, the authors see little possibility for the non-schizophrenic twin to experience a breakdown because they feel the cause of the schizophrenia in this instance was the role of the boy in the family rather than a genetic predisposition.

Erichsen, F. The father of schizophrenics, (Germany) Zeitschrift fur Psychotherapie und medizinisch Psychologie, 1973, 23, 5, 169-185. (From Psych Abstracts, 1974, 52, #7837, p. 1001.)

This is a continuation of a study which presents data from 1965 to 1969 on the fathers of 122 schizophrenics. The influence of the father on the development of the disorder seems significant when the children's feeling concerning their father were examined in detail.

The first study was published in the above Journal, 1973, 23, 4, 130-140.

Franklin, P. Family therapy of psychotics. American Journal of Psychoanalysis, 1969, 29(1), 50-58.

An interrelationship between the symptomatology of a schizophrenic individual and the emotional life of his/her primary family is postulated. The author contends that a therapeutic intervention can modify the family dynamics and influence the fate of its psychotic member.

The psychoanalytic view of the origins of schizophrenia based on mother-child interactions and attitudes are summarized. The traits of a schizophrenic producing mother, including clinging, complete control, living vicariously through her child, and conveying to her child that only one of them will survive are listed.

The author then deals with one particular case and illustrates what he perceives to be a model intervention.

Gardner, G. The relationship between childhood neurotic symptomology and later schizophrenia in males and females. Journal of Nervous and Mental Disease, 1967, 144, 2, 97-100.

As part of a larger study concerning histories and symptoms of children seen at a guidance center, this paper deals with neurotic presenting symptoms and their relationship to later onset of schizophrenia. Sixty male preschizophrenic (32 of whom became chornic), 48 female schizophrenic (25 of whom became chronic), 28 male and 29 female control children were studied with results showing that certain neurotic symptoms (phobias, obsessive-compulsive traits, hysterical traits, general anxiety) were good predictors of later male schizophrenia while no such relationship for females was found.

The author discusses sex roles and societal expectations in relation to neurotic syndromes in both sexes and hopes that further research in the area would allow for early identification and assistance for boys with these problems.

Haley, J. Testing parental instructions to schizophrenic and normal children: a pilot study. Journal of Abnormal Psychology, 1968, 73, 559-565.

After presenting briefly the hypothesis that parents communicate to their schizophrenic children in conflicting ways, the author described the procedures he utilized to ascertain its validity. His results suggested that parents of schizophrenic children communicate as well as those of normal children, but that their schizophrenic children do not perform as well. The results are not assumed to be conclusive. Noting that the biased composition of his comparison groups may have influenced the outcome, he also offers some alternative explanations to schizophrenic behavior.

Haworth, M., & Menolascino, F. Some Aspects of Psychotic behaviors in young children. Archives of General Psychiatry, 1968, 18, 355-359.

The authors extensively studied tapes of psychotic, normal, and brain-damaged children. They discuss the deviant behaviors exhibited by psychotics in the areas of speech and mouth behaviors, hand manipulations, and visual avoidance.

They then hypothesize that these deviant patterns of development found in psychotic children occur from a need to retreat from contact and involvement building a self-protective shield. This shield prevents him from exhibiting normal behaviors that would invite interaction with the world.

Jordan, I., & Progh, D. G. Schizophreniform psychosis of childhood. American Journal in Psychiatry, 1971, 128, 323-331.

Twenty-two boys who were traumatized by stress of school were examined. Their symptoms closely corresponded to the 1966 Group for Advancement of Psychiatry description of schizophreniform psychosis: impaired reality testing, extensive fantasies, paranoia, hallucinations, fluctuating ego functioning, and intensely dependent attachments to adults. This disorder does not appear until 5 or 6 years of age. When early psychotherapy was carried out for a year or more, prognosis was good. The importance of early recognition and treatment is stressed. The question of these patients' long term (adulthood) prognosis is not answered.

Kolvin, I., Goiside, R. F., & Kidd, J. S. H. Parental personality and attitude and childhood psychoses. British Journal of Psychiatry, 1971, 118, 403-406.

The hypothesis that the personality and attitudes of parents exert a fundamental influence on the developing child was examined. The authors tested this hypothesis in relation to abberrant personalities and undeniable psychiatric disorder in childhood. Forty-two percent of the mothers of 32 late onset psychoses (LOP) children were regarded as introverted, but only 13% of mothers of 46 infantile psychoses (IP) children. Twenty LOP mothers and 26 IP mothers were administered the MMPI which confirmed the introversion of LOP mothers. There was a greater percentage of sensitive, suspicious parents in this group. More parents of IP children were overprotective. These findings support the differentiation of childhood psychotics into distinct diagnostic categories.

Kolvin, I., Ounsted, C., Richardson, L. M., & Goiside, R. F. The family and social background in childhood psychoses. British Journal of Psychiatry, 1971, 118, 396-402.

This study suggests that parents of children with infantile psychosis belonged to upper social classes and more parents of children with late onset psychoses (LOP) to lower ones. Mothers of LOP children showed tendencies toward social isolation,

attributed to the mothers' personalities; whereas social isolation in mothers of infantile psychoses (IP) children was thought to be a withdrawal secondary to their child's illness. Parents of the IP group had low rate of schizophrenia, parents of the LOP group a significantly high rate, suggesting possible genetic connection between LOP of childhood and adult schizophrenia. Boys were often more psychotic than girls, while the IP group suggested greater risk to first born.

Lidz, T. Family, language and schizophrenia. Psyche Stuttgart, 1968, 22(9-11), 701-719.

This article links schizophrenia with a parent's inability to provide the child with appropriate language skills and ability to abstract common attributes from words and experiences. Ego functioning is seen as dependent on language. According to the author, when individuals have effective language skills, schizophrenic withdrawal and distortion of thinking and expression result.

Mahler, M. S., & Furer, M. Child psychosis: a theoretical statement and its implications. Journal of Autism and Childhood Schizophrenia, 1972, 2, 213-218.

This paper describes in psychoanalytic terms the psychic and behavioral interactions that form the hypothesized foundations of child psychosis. Two general symdromes of child psychosis are delineated: infantile autism and symbiotic autism. The two symdromes are defined and pinpointed along a developmental scale. Therapeutic treatment of both syndromes consists of re-establishing a symbiotic union between mother and child with the therapist as a mediator. Mother and child then can work through the separation-individuation process again enabling the child to move through developmental stages.

Margaro, P. A., & Hanson, B. A. Perceived maternal nurturance and control of process schizophrenics, reactive schizophrenics, and normals. Journal of Consulting and Clinical Psychology, 1969, 33, 507.

The authors report results which support the hypothesis of nurturance differences being present between the mothers of process schizophrenics and mothers of reactive schizophrenics. Process schizophrenics report the child-rearing period as devoid of affection, while reactive schizophrenics rated their mother similar to normals, that is, higher in demonstrated affection.

Instruments used were the Parent Attitude Research Instrument measuring control and the Parent Child Interaction Rating Scale measuring nurturance.

Mitchell, K. M. An analysis of the schizophrenogenic mother concept by means of the thematic apperception test. Journal of Abnormal Psychology, 1968, 73(6), 571-574.

The study extends an earlier study which uses the Thematic Apperception Test (TAT) to assess the concept that when the needs of the schizophrenogenic mother and child conflict, the mother will satisfy her needs by manipulating her child in such a way that the child's behavior will satisfy her needs. The TAT was administered to 20 mothers of schizophrenic children and 20 mothers of normal children. Children and mothers were matched in both groups. Results of the study indicate that mothers of schizophrenic children can be significantly differentiated from mothers of normal children, based on a TAT analysis.

Offord, D. The natural histories of schizophrenia, depression, disorder and psychopathy: current status. Psychosomatics, 1971, 12, 3, 179-185.

In the first section of this report, the author summarizes recent studies concerning the childhood antecedent behaviors and environments which may be of importance in predicting adult schizophrenia. An ongoing 20-year study on this subject is discussed, and the complexities of the subject detailed. The author then beiefly outlines similar research concerning manic-depressive disorders of adulthood where, unlike schizophrenia, researchers could find no predictive childhood antecedent behaviors.

The article concludes with a discussion of sociopathic adults and the identified points of prediction in childhood available to the clinician. The author stresses the importance of identifying in children the high risk groups susceptible to later onset of psychiatric illnesses in order to begin preventative measures.

Offord, D., & Cross, L. Adult schizophrenia with scholastic failure or low IQ in childhood. Archives of General Psychiatry, 1971, 24, 431-436.

This article reviews the literature tracing childhood behavior and its connection to later onset of schizophrenia. They investigate IQ level in children who later develop schizophrenia by comparing school records of twenty-nine schizophrenics, their siblings and an unrelated control group. IQ scores in the schizophrenic group appeared lower than the control group as was the last completed grade of school.

The authors discuss the apparent importance of IQ and the grade in school last completed to later onset of psychosocial difficulties, noting that these individuals have earlier onset of problems than controls.

Rodnick, E. H. The psychopathology of development: investigating the etiology of schizophrenia. American Journal of Orthopsychiatry, 1968, 38(5), 784-798.

The developmental processes of human behavior which may form an etiological basis of schizophrenia are investigated. There appears to be a pattern of genetic factors, physical and psychological stress reactions and psychopathological coping mechanisms in schizophrenic development. The point is made that schizophrenics are hypersensitive to criticism of their performance. Their major coping mechanism is to withdraw from anxiety and stress resulting in schizophrenic behaviors.

Rutt, C., Offord, D. Prenatal and perinatal complications in childhood schizophrenics and their siblings. Journal of Nervous and Mental Disease, 1971, 152, 324-331.

Thirty-three childhood schizophrenics and their 83 siblings were studied for possible prenatal and perinatal complications. Further, each schizophrenic child was ranked on a five-step scale (Goldfarb, 1968), appraising his ego status (from very severely disturbed adaptive capacity to a normal capacity to adapt).

Results showed a less than significant difference in prenatal complications, but a significantly higher number of perinatal problems in the schizophrenic. Further analysis revealed a negative correlation between ego status, IQ, and age of hospital admission for the schizophrenic children.

The authors conclude that in a family with schizophrenic tendencies, both complications may mingle with the child's environmental stresses to encourage the onset of the schizophrenic syndrome.

Schaham, A. I. Activity, talking time, and spontaneous agreement in disturbed and normal family interaction. Journal of Abnormal Psychology, 1972, 79, 68-75.

This article deals with triadic family interaction variables in resolving conflict. An attempt is made to differentiate normal and disturbed family patterns.

Schopler, E. Parents of psychotic children as scapegoats. Journal of Contemporary Psychotherapy, 1971, 4(1), 17-22.

The author points out that parents of autistic and psychotic children are often said to be the primary cause of their children's problems, despite neurological and biochemical evidence to the contrary. He reviews Allport's work on scapegoating and describes why professionals scapegoat parents, how the parents' actions encourage this attitude, and how the parents are likely to respond to being scapegoated. He then points out how this practice can be avoided through increased understanding of both the causes of scapegoating and the causes of psychosis in children.

Watt, N. F., Stolorow, R. D., Lukensky, A. W., & McClelland, D. C. School adjustment and behavior of children hospitalized for schizophrenia as adults. American Journal of Orthopsychiatry, 1970, 40, 637-657.

Childhood public school records of thirty nonmigratory hospitalized schizophrenic adults were compared with those of ninety matched control children presumed to have become normal adults. Findings showed that: 1) a substantial proportion of children destined to become adult schizophrenics can be identified by their behavioral patterns in public school long before they are diagnosed schizophrenic; 2) preschizophrenic boys showed more unsocialized aggression than normal boys and preschizophrenic girls showed more overinhibition than normal girls; 3) family background and parental social class seem to be implicated as important causes of maladjustment patterns; 4) no behavioral evidence of sex-role reversal or sex-role alienation was found in the preschizophrenic children.

Wolman, B. B. Childhood schizophrenia or Vectorasis Praecocissima. American Journal of Psychotherapy, 1970, 24, 264-277.

The author delineates and discusses four different levels of childhood schizophrenia and compares them to adult schizophrenia. Stating that childhood schizophrenia is a failure to develop while adult schizophrenia is a regression to early levels of development, he notes that in both cases the schizophrenic struggles to avoid parental exploitation and excessive demands.

CHILDHOOD PSYCHOSIS: ETIOLOGY

ORGANIC

Abrams, N., & Pergament, E. Childhood psychosis combined with XYY abnormalities. Journal of Genetic Psychology, 1971, 118, 13-16.

A case study is presented of a young psychotic boy with a #47/XYY chromosome, a condition which has shown a statistically significant relationship to the male criminal population in prisons. The child's psychotic diagnosis was based on behaviors including lack-of-eye-contact, rocking, headbanging, a typical hand posturing and lack of response to environmental stimuli.

The child's neo-natal history, family history, and medical tests results are presented. Several abnormality tests were discussed including blood results, EEG's and a chromosome scan which revealed the XYY gene.

Based on this case and because of the high ratio of males to females in diagnosed childhood psychosis, coupled with Rimland's theory of a genetic aberration causing autism, the authors suggest a genetic link underlying gross behavioral abnormalities.

Alvarez, W. Some psychoanalysts who blame the family. Journal of Schizophrenia, 1968, 2, 1, 1-2.

The author suggests that psychoanalysts treating young adults with severe problems often lead their clients to believe that their problems are the fault of parents. Evidence is presented that this process serves no functional purpose in assisting the patient, and in most cases blame cannot logically be attributed in this manner as mental illnesses are often rooted in previous generations. He concludes that heredity should be taken into account when dealing with mental distrubance.

Fish, B. Contributions of developmental research to a theory of schizophrenia. Exceptional Infant, 1971, 2, 473-482.

The author summarizes results from six longitudinal studies involving 213 children, 89 of whom were diagnosed as schizophrenic at some point in their development. Data on postural, locomotor, proprioceptive, and language development along with arousal measures were examined. A general disorder in the timing and integration of developmental functions is indicated rather than a specific deficit in any one area. The author suggests that a dysfunction of the reticular system may account for the maturation irregularities. Further, hypothetical relations are drawn between impaired integration, social reinforcement and sensory deprivation.

Fish, B., & Hagin, R. Visual-motor disorders in infants at risk for schizophrenia. Archives of General Psychiatry, 1973, 28, 900-904.

The hypothesis that poor integration of early neurological development could be an indication of an infant's vulnerability to schizophrenia is considered. Visual-motor development of ten infants born to schizophrenic mothers was measured from birth to two years in order to study evolving disorders at various levels of brain function. Visual and spatial deficits and retardation in manipulation were noted and highly correlated to suggest an early mechanism for the poor integration of vision and body awareness and coordination seen in schizophrenic adults.

Gittleman, M., & Birch, H. Childhood schizophrenia: intellect, neurologic status, perinatal risk, prognosis, and family pathology. Archives of General Psychiatry, 1967, 11, 16-25.

An examination of 97 children with diagnosis of early childhood schizophrenia clarifies and defines some issues and problems of etiology. In analyzing the interrelation between organismic variables and the course of the disorder, the most notable findings were: 1) over 50% of children had subnormal IQ associated with neurological dysfunction; 2) intellectual development was stable; 3) perinatal complications were excessive in subnormal children; 4) central nervous system pathology was evident in 80% of all children, either on examination or clinical history.

These findings support the view that neurological damage, or the risk of such, is frequently encountered in a group of noninstitutionalized schizophrenic children.

Gittelman, M., & Cleeman, J. Serum magnesium differences: further evidence for discontinuity between adult and childhood schizophrenia. Mental Hygiene, 1971, 55, 492-494.

The study compares the serum magnesium level of 33 diagnosed schizophrenics with 26 normal subjects and reports no significant differences. This finding is contrasted with previous evidence finding a 20% higher magnesium level in adult schizophrenics compared to normal controls. The author argues that this lack of congruence between research findings with adult and childhood schizophrenics indicates separate syndromes.

Guggenheim, F. G., Pollin, W., Stabenau, J. R., & Mosher, L. R. Prevalence of physical illness in parents of identical twins discordant for schizophrenia. Psychosomatic Medicine, 1969, 31(4), 288-299.

The medical histories of fifteen sets of monozygotic twins discordant for schizophrenia and their 30 parents were studied. Specific criteria for the selection of twins and parents were established and diagnosis of schizophrenia was based on Bleulerian criteria. The results indicated a prevalence of physical disease in general, for both the twins and their parents, and thyroid diseases in 47% of the mothers. The authors conclude that there is an intimate relationship between certain types of physical illness and emotional crises.

The study seems to present sound research techniques and suggests inquiries into additional factors which may have influenced the results.

Henningsen, G. J., & Klinken, L. Brain biopsy in selected cases of infantile psychosis. Acta Paedopsychiatrica, 1971, 38, 3, 90-96.

Infantile psychosis is related to mental deficiency and dementia according to the authors diagnostic labeling. Ten children suffering from a sudden unexplained arrest of mental development and severe intellectual impairment, and diagnosed as suffering from either infantile psychosis (four children), mental deficiency (four children), or dementia (two children) underwent a series of medical/chemical tests and brain biopsies, EEG's in the first group were all normal and brain biopsies showed no definite abnormalities. EEG's in the other groups were abnormal and biopsies of brain matter showed abnormalities ranging from mild to severe.

The authors see the value of an EEG as a predictor for the necessity of a brain biopsy in determining organicity of the problem and whether the various syndromes are genetic or acquired.

Hilburn, W. Dermatoglyphic finding on a group of psychotic children. Journal of Nervous and Mental Disorders, 1970, 151(5), 352-358.

Psychotic children's dermatoglyphic patterns (epidermal ridges on the volar surfaces of hands and feet formed in the womb but affected by external stimuli, i.e., rubella, thalidomide) were studied to ascertain their value as indicators of interuterine damage. Twelve boys and eight girls were chosen carefully to avoid brain damaged or retarded children with secondary psychotic symptoms. The results of the analyses showed an increased incidence in the occurrence of certain rare patterns not found often in a randomly selected normal population.

The author states that the significance of the problem is still unclear and calls for more research.

Kolvin, I., Humphrey, M., & McNoy, A. Cognitive factors in childhood psychoses. British Journal of Psychoses, 1971, 118, 415-419.

The cognitive development of 80 psychotic children is reported. Onset of psychoses in the first three years of life (N=47) was associated with major intellectual deficit, while later onset (N=33) was associated with only moderate deficit as shown on the WISC, Stanford-Binet (1960) or Merrill-Palmer. Low IQ tended to be associated with evidence of cumulative cerebral dysfunction in the early onset group and with delayed growth periods in the late onset group.

Kolvin, I., Ounsted, C., & Roth, M. Cerebral dysfunction and childhood psychoses. British Journal of Psychiatry, 1971, 118, 407-414.

The presence of cerebral dysfunction was sought in 46 children suffering from infantile psychosis and in 33 children suffering from late onset psychosis determined by anomalies in perinatal life, and by EEG examinations. Age of onset and behavioral features were used as ascertainment criteria. The results indicate the 46% of the infantile psychosis and 69% of late onset psychosis had no evidence of dysfunction. Thirty-three percent of both groups had abnormal EEGs. The authors state that childhood psychoses are a heterogeneous collection and also discussed the evidence for an organic pathology.

The authors reveiw a series of papers which have shown evidence of cerebral dysfunction in infantile autism and other psychoses.

Lucas, A. R., Krause, R. R., & Domino, E. F. Biological studies in childhood schizophrenia: plasma and RBC cholinesterase activity. Journal of Autism and Childhood Schizophrenia, 1971, 1(1), 72-81.

Investigations of metabolic aberrations in childhood schizophrenia failed to demonstrate differences between schizophrenic and control groups. Cholinesterase activity has not been previously reported in schizophrenic children. This study reports results of plasma (pseudo) cholinesterase and erythrocyte (true) cholinesterase activity in 16 male childhood schizophrenics and 16 male nonpsychotic control patients. No significant differences were found. A highly significant unexpected finding was the inverse correlation between acetylcholinesterase activity of erythrocyte and serotonin uptake by platelets in both groups. This negative correlation was less significant in the schizophrenic patients.

Lucas, A. R., Warner, K., & Gottlieb, J. S. Biological studies in childhood schizophrenia: serotonin uptake by platelets. Biological Psychiatry, 1971, 3, 123-128.

Serotonin uptake by platelets of schizophrenic children and hospitalized controls was investigated. The subjects were 16 male schizophrenic (mean age 12.9 years) and 16 control patients (mean age 12.5 years). No significant difference in uptake by platelets was discerned. It is stated that while the relationship between childhood and adult schizophrenia is not yet established, retrospective and follow-up studies indicate that former childhood schizophrenics constitute a significant proportion of chronically hospitalized adult psychotic patients. For this reason, and because of the greater likelihood of detecting a metabolic aberration early in the illness, it seems important to study schizophrenic children.

Ormheiber, P. The development and consistency of auditory-visual integration in schizophrenic children. Dissertation Abstracts International, 1968, 28 (12-Part 1), 5210.

The study is concerned with the integration of sensory information by children diagnosed as childhood schizophrenic. Normative data for 50 schizophrenic and 237 normal children were compared on visual-auditory integration. Results indicated that schizophrenic children were less proficient than normal children but improvement of auditory-visual integration seemed to improve with age for schizophrenic children. The deficient performance of schizophrenic children was on intersensory tasks and was interpreted as being based on a central nervous system disturbance which affects the ability to process environmental information.

Rutt, C. N., & Offord, D. R. Prenatal and perinatal complications in childhood schizophrenics and their siblings. The Journal of Nervous and Mental Disease, 1971, 152, 324-331.

Thirty-three childhood schizophrenics and their eighty-three siblings were compared on prenatal and perinatal complications. The childhood schizophrenics had a higher rate of prenatal complications than their siblings but the difference was not significant. However, childhood schizophrenics did have a significantly higher rate of perinatal complications. It was suggested that in families already predisposed genetically for the development of schizophrenia, the addition of reproductive complications, especially perinatal factors (e.g., breech position, placenta previa, forceps delivery, newborn distress, induced labor for complication) may be enough to tip the balance between health and disease, and disrupt the child's later development.

Shapiro, T., Roberts, A., & Fish, B. Imitation and echoing in young schizophrenic children. Journal of the American Academy of Child Psychiatry, 1970, 9(3), 548-567.

The paper describes the echolalia of young schizophrenic children. A comparison is made of the verbal imitation of schizophrenic and normal children. Echoing is seen as a precursor to communicative language and as a fixed sterotype symptomatic of some disturbance in the processes of integration and identification. The schizophrenic child's speech is shown to be retarded and developmentally deviant. There appears to be a defect in integrative function which accounts for the rigidity of imitation.

Siva-Sankar, D. Studies on blood platelets, blood enzymes, and leucocyte chromosome breakage in childhood schizophrenia. Behavioral Neuropsychiatry, 1971, 2(11-12), 2-10.

The author's study showed that there are significant differences in the blood platelets functioning between autistic children and nonautistic or nonschizophrenic children. It is suggested that this indicates probable red cell membrane differences between autistic and nonautistic children. The study also found that autistic schizophrenic children have a higher incidence of chromosome breakage in leucocytes in culture, which indicates biological defects in childhood autistic schizophrenics.

The article is written in technical terms and is not readily understood by a person unfamiliar with biochemical terminology.

Sporber, M. A., Salomon, L., Collins, M. H., & Stambler, M. Childhood schizophrenia and 47, XXY Klinefelter's Syndrome. American Journal of Psychiatry, 1972, 128, 1400-1408.

The authors report a significantly greater proportion of children with Klinefelter's syndrome (4 cases) in a clinical population of 350 hospitalized male schizophrenics than expected in newborns. While Klinefelter's syndrome, which is essentially an endocrinological disorder, has previously been related to adult neuropsychiatric disorders, this is the first study relating it to childhood schizophrenia. The authors claim that a differential diagnosis indicates schizophrenia, rather than infantile autism or oligophrenia, is associated with the XXY syndrome. This relationship favors the view of schizophrenia as a disturbance resulting from an interaction of biological, emotional, familial and social factors.

Walker, H. A., & Birch, H. G. Lateral preference and right-left awareness in schizophrenic children. Journal of Nervous and Mental Disease, 1970, 151, 341-351.

Lateral dominance and right-left awareness were evaluated in eighty males, ages 8 through 11 years, diagnosed as childhood schizophrenics. All the subjects evaluated had normal intelligence and showed no localizing signs of central nervous system damage. The subjects showed poorly developed lateral preference and right-left awareness. In contrast to normal children, who display age specific progressions of hand preference and lateral awareness, the subjects showed no clear evidence of age-progression improvement.

It is suggested that this disturbance in development may indicate the presence of primary central nervous system dysfunction in schizophrenic children and may be a factor contributing to clinical manifestations of the disease.

Walker, H. A., & Birch H. F. Neurointegrative deficiency in schizophrenic children. Journal of Nervous and Mental Disorders, 1970, 151, 104-113.

One-hundred male schizophrenic children ages seven through eleven were compared to 210 normal children ages five through twelve on their neurointegrative ability.

The measuring task involved the equation of visual dot patterns with temporal patterns of auditory stimulation. All subjects had normal hearing and normal or corrected vision.

Schizophrenic children were found to be significantly inferior to normal children in their neurointegrative competence. It is suggested that this difference may be caused by both defective integrative mechanisms in schizophrenic children as well as arrested integrative development.

Zarcone, J., Kales, A., Scharf, M., et. al. Repeated oral ingestion of 5 hydroxytryptophan. The effect on behavior and sleep processes in two schizophrenic children. Archives of General Psychiatry, 1973, 28, 843-846.

The author's hypothesized that childhood schizophrenia can be caused by decreased 5-HTP in the brain stem systems which regulate REM sleep. This deficit would allow for release of REM phasic activity into the waking state causing a mixed dream-waking state. Earlier clinical observations suggested a positive correlation between 5-HTP and schizophrenia that was not borne out in this study. 5-HTP did have a significant REM enhancing effect, but it caused no behavioral change.

Despite this, the authors still see a possible connection of brain stem abnormality and amount of REM sleep as important in discussing the behavior of childhood schizophrenia.

CHILDHOOD PSYCHOSIS: TREATMENT

CHILDHOOD PSYCHOSIS: TREATMENT

PSYCHODYNAMIC APPROACHES

Betensky, M. Case study: four years of art therapy with a schizoid boy. American Journal of Art Therapy, 1970, 9, 279-287.

This is a case study of an adopted schizophrenic who, during four years in art therapy, began to express his feelings about himself and his family for the first time. His progress is described, the techniques of the therapist are discussed and several examples of his art work are presented. Allowed to express himself artistically, the boy's behavior and functioning ability showed marked improvement.

Chitnick, M., & Fast, I. A function of fantasy in the borderline child. American Journal of Orthopsychiatry, 1970, 40, 756-765.

This study describes a "borderline" syndrome which is related to autism, delineated as an atypical, deviational and showing fragmented ego development. The borderline children apparently make a deeper commitment to the outside world's independent reality than psychotics but have not integrated with external reality to the extent that neurotics do.

The behaviors of these children are described, notes concerning their fantasies from psychotherapeutic sessions are included, and an analysis of these fantasies presented. As a result of the study of this group of children which graphically delineates the characteristics of the fantasies, a more effective therapeutic method has evolved. The optimal attitude of the therapist was seen to be one of acceptance of the fantasies in order to contribute to the child's developing commitment to the real world.

Conant, L. F., & Chambers, C. H. Establishing contact with psychotic children using water as a threatening environment to induce dependency. American Corrective Therapy Journal, 1969, 23(6), 176-179.

The article presents a study of a technique to reduce the time required to develop a therapeutic relationship between a psychotic child and the therapist. The evaluation involved observations of a child's development of trust and a sound relationship with his instructor when being taught swimming.

The subjects, two male in-patients (ages eight and ten years), were mute psychotics with no evidence of primary retardation or neurological deficit. During ten weeks, five mornings per week, each child was taken to the pool by the therapist for swimming instruction. Assistance with undressing and dressing were also provided by the therapist and verbalization was encouraged.

The results of the study indicated that this technique was useful in developing a therapeutic contact. However, total improvement and adaptive change were primarily evident in only one of the two subjects. The authors suggest that further studies be developed with a larger sampling.

Fisher, G. The psycholytic-treatment of a childhood schizophrenic girl. International Journal of Social Psychiatry, 1970, 16, 112-130.

Working under the hypothesis that psychosis is a massive defense system using repression, avoidance and denial in order to protect the self from any experience of feelings, the use of psychodelic drugs was attempted in order to allow the person to experience phenomena without the usual defensive structure. The case presented is a report of one of twelve institutionalized autistic and schizophrenic children who were experimentally treated. A descriptive sensitive account and evaluation of the therapy sessions following drug treatment was presented.

The conclusion, after consideration of this case as well as a review of the research on the application of psychedelic drugs for psychotic children, was a strong argument for more extensive application in treatment.

Gratton, L,, & Rizzo, A. E. Group therapy with young psychotic children. International Journal of Group Psychotherapy, 1969, 19(1), 63.

The authors hypothesized that psychotic children would exhibit their problems in group situations. The Ss (=7) fear of human contact and propensity to distrubed behavior became obvious through their withdrawal and exclusive preoccupation with inanimate objects, and their lack of involvement with people, especially when approached by others.

After six months of therapy, group cohesion developed and a slight improvement was seen in the subjects. Because of the slow rate of progress it was suggested that four or five years of therapy would be needed to bring these Ss to near normal levels of functioning.

Havelkova, M. Follow-up study of 71 children diagnosed as psychotic in preschool age. American Journal of Orthopsychiatry, 1968, 38(5), 846-857.

Seventy-one children ages 8-17 diagnosed at preschool age as having infantile autism or childhood schizophrenia were followed-up for over four years. Forty-two of the children deemed less severely affected received the author's treatment approach which consisted of a strong one-to-one intervention where each child had his own playroom and individual therapist. The therapist related normally to the child, offering restrictions and giving appropriate directions during activities that included physical contact, dressing skills, toileting skills and toy-play skills. A strong relationship between the therapist and child was established and used to facilitate subject transfer to a group nursery program.

The author concludes that childhood psychoses results in deficits of varying degrees that can only be partially overcome. Although the research allowed no definite conclusions, the author suggests a critical period for treatment determined by the maturational level of the less severely ill child.

Ney, G., Palvesky, A. E., & Markely, J. Relative effectiveness of operant conditioning and play therapy in childhood schizophrenia. Journal of Autism and Childhood Schizophrenia, 1971, 1, 337-349.

The effectiveness of operant conditioning (OC) and play therapy (PT) were compared. Two groups with 10 schizophrenic boys (5-13 years) who had been diagnosed according to the British Working Party's Criteria were matched for age, signs of organicity, length of hospitalization, amount of speech, and adaptive behavior. All of the subjects were aggressive, did not interact with others, and were functioning intellectually at a retarded level. One group had 50 sessions of OC followed by 50 sessions of PT while the other group had its PT session first. The results showed that the combination of PT with OC was effective. However, the OC treatment was more effective and cumulative in comparison to the PT.

Osorio, L. Milieu therapy for child psychosis. American Journal of Orthopsychiatry, 1970, 40, 121-129.

The author discusses in detail a therapeutic community that has been established in the Kanner Institute in Brazil. He believes that personality is achieved through an interaction of the child with the environment and he strives to offer satisfactory and realistic life situations for the child to ease his conflicts and acquire self-knowledge and awareness.

Children are divided into homogeneous groups for school and these groups meet as a club for after school activities. The activities allowed the children to begin to interact constructively and become change agents for each other's behavior.

The author cautions the use of milieu therapy for all psychotics and suggests the situations when it is most useful.

Schultz, R. J. A study of changes in art expressions of emotionally distrubed and psychotic children. Dissertation Abstracts International, 1972, 32a, 3703-3704.

The author presents a non-statistical investigation of art therapy as a "communicative and interpretive tool," and as a means of interacting with distrubed children to promote behavioral change. Twenty "disturbed and psychotic children, aged six to twelve" were participants while in "day care" or residential treatment at a state institution. While the author concludes that relations existed between the elements of the child's art, the child's clinical progress, and the therapist-client interaction, a more rigorous treatment of the subject seems necessary.

CHILDHOOD PSYCHOSIS: TREATMENT

BEHAVIORAL APPROACHES

Baker, R. The use of operant conditioning to reinstate speech in mute schizophrenics. Behavior Research and Therapy, 1971, 9(4), 329-336.

Eighteen mute schizophrenic patients ranging from 3-37 years were divided into two groups - nine were positively reinforced for verbally responding to questions and the nine in the control group were positively reinforced for remaining silent. A cross-over design was also implemented.

In a follow-up study a year later, no significant decline in the conditioned behavior was revealed, and it was felt that the improvement in the nine who were positively reinforced was the result of that reinforcement.

The author states a need to consider the meaningfulness of this improvement because the speech was not spontaneous (only in reply to questions) and was automaton-like.

Bartlett, D., Ora, J. P., Brown, E., & Butler, J. The effects of reinforcement on psychotic speech in a case of early infantile autism, age 12. Journal of Behavior Therapy and Experimental Psychiatry, 1971, 2(2), 145-149.

In this study, reinforcement procedures were applied to a twelve-year-old autistic male, who had developed psychotic speech patterns when he was five (noises like a pump accompanied by motions).

During weekly sessions with a student therapist, the subject was reinforced positively for rational comments with plastic chips exchangeable for money, and was penalized by token loss for inappropriate comments. Removal of the reinforcement system indicated that the subject's verbal behavior was controlled by the token schedule.

In conclusion, the authors stated that the use of operant conditioning procedures may be useful as a treatment approach if a child diagnosed as having Kanner's syndrome is not intellectually impaired and has adequate speech.

Bucher, B., & King, L. Generalization of punishment effects in the deviant behavior of a psychotic child. Behavior Therapy, 1971, 2, 68-77.

Reports in the literature concerning results of punishment used to suppress deviant behaviors have shown that severely retarded or disturbed children are capable of learning a fine degree of discrimination between settings where a behavior will be or will not be punished. The authors devised a program aimed at achieving more expansive generalization of punishment effects and suppression of deviant behaviors.

An eleven-year-old retarded, schizophrenic boy, hospitalized for five years who was destructive to his environment was exposed to sixteen different conditions where his deviant behavior was punished 100 percent of the time. The methods used are described in detail and the authors conclude that they succeeded in reducing the frequency of the undesired behavior and speeding up the process of achieving suppression in new environments.

Carlin, A., & Armstrong, H. Rewarding social responsibility in disturbed children: a group play technique. Psychotherapy: Theory, Research, and Practice, 1968, 5, 169-174.

The authors described the possibilities and the limitations of attempts to facilitate interaction among disturbed children. Their treatment program, utilized in a male residential setting, emphasized social responsibility and token reinforcement.

They concluded that disturbed children can be taught to work and play among themselves in reasonable harmony by using operant techniques adapted to the particular circumstances of the boys' behavior. Appropriate play behaviors became generalized to other portions of the residential program.

The authors conclude that the program was successful in motivating the boys to positive social interaction thus decreasing hostile and aggressive behavior.

Churchill, D. W., & Bryson, C. Q. Looking and approach behavior of psychotic and normal children as a function of adult attention or preoccupation. Comprehensive Psychiatry, 1972, 13(2), 171-177.

Although lack of eye contact and disinterest or withdrawal from interpersonal relations have often been used as characteristics to diagnose a child as being psychotic (autistic or schizophrenic), the authors' findings questions the validity of doing this. Fourteen hospitalized autistic (8) and schizophrenic (6) children were matched with normal nonhospitalized controls for age, sex, and socioeconomic status. They were observed on 1 day for 3 weeks in controlled situations in which an unfamiliar female was either preoccupied or attentive. Although the type of affective responses and communication differed between the groups, both the control and psychotic children increased their looking and approach behaviors in response to an adult's attention. The authors conclude that this finding implies that the eye-contact and withdrawal criteria needs to be more accurately defined.

Cline, D. Video tape documentation of behavioral change in children. American Journal of Orthopsychiatry, 1972, 42(1), 40-47.

This study is concerned with advances that can be made in behavioral treatment through the use of video taping procedures as a permanent record of behavioral change.

One set of twins, along with their parents, was video taped together over a period of a year while they were receiving treatment and training in behavioraltherapy. Video tapes were also made of one normal male peer for comparison purposes. Results of treatment or summaries of procedures were not detailed.

The authors praise video taping procedures because of the objective record of quantitative and qualitative change it provides. They are now working on a behavioral coding system to increase observer reliability.

Gardner, J. E., Pearson, D. T., Bercovice, A. N., & Bricker, D. E. Measurement, evaluation, and modification of selected social interactions between a schizophrenic child and his parents, and therapist. Journal of consulting and Clinical Psychology, 1968, 32, 537-542.

The authors attempted to develop a reliable observation technique to identify the significant reinforcement contingencies between a six-year-old child, his parent, and therapist. In the case study described the task was accomplished and was followed by a treatment program involving both parents and children based on reinforcement theory and utilizing the observation data. The programs were successful in this particular case and the authors encourage the use of the approach in developing treatment programs. They do, however, recognize the limitations of judging by one case and do not make any generalizations.

Grottwald, P., & Redlin, W. Behavior therapy with mentally handicapped children: Basic concepts, results and problems of behavior therapy with retarded, autistic and schizophrenic children. Zeitschrift fur Klinische Psychologie, 1972, 2, 93-149. (From Psych Abstract, 1974, 51, #7691, p. 969.)

A general discussion and review of current works in the field of behavior modification with exceptional children is presented. Principles and procedures are discussed in terms of their application to retarded, autistic and schnizophrenic children with problems in the areas of socialization, selfhelp, and language development. Techniques of eliminating disruptive, hostile or self-injurious behaviors are discussed.

Overall, the article covers most aspects of behavior modification techniques as they have been generally applied to these populations.

Guralnick, N. A language development program for severely handicapped children. Exceptional Children, 1972, 39, 45-49.

The study concerned the possibility of utilizing undergraduate college students to help severely handicapped nonverbal or retarded children develop language. The undergraduates had at least one course in behavioral principles. Each student worked from three to six hours a week for one semester in a day care center with eight subjects who had limited verbal repertiores and no imitative behaviors. The results suggest strongly that undergraduate students can apply the technical skills they have obtained and can contribute toward the language development of severely handicapped children.

Lovaas, O., Schaeffer, B., & Simmons, J. Building social behavior in autistic children by use of electric shock. Journal of Experimental Research in Personality, 1965, 1, 99-109.

The study involved five-year-old twins diagnosed schizophrenic with pronounced autistic characteristics: no social responsiveness, incontinency, stereotyped manipulating of objects and repetitive hand movements. Pain was induced through an electric grid in the floor of the experimental room. Shock began after a pathological behavior was emitted and was terminated when the children approached the adult present in the room. Other experimental conditions were set up to help establish a dependency on adults for relief of pain.

The data, which are thoroughly discussed and analyzed, indicates a decrease in pathological behaviors and an increase in positive social behaviors towards adults after the use of contingent electric shock.

Marshall, N. R., & Hengrenes, J. The use of written language as a communication system for an autistic child. Journal of Speech and Hearing Disorders, 1972, 37, 258-281.

The authors present a case study of the development of written language in a 7:8-year-old, mute boy. Behavior modification was used to establish non-disruptive training behavior followed by communication training through a pattern language program utilizing food as a reinforcer. Goals included: 1) the development of a beginning functional vocabulary, 2) correct semantic and syntactical sequencing of word cards, and 3) transference of the concepts learned to written communication.

The authors report success in the first two goals and progress on the third. They also indicate that the subject's mother noted a reduction in his frustration behaviors and a seeming pleasure in his expanded word repertoire. While the authors refer to the child as autistic, they present two diagnosis of childhood schizophrenia with interactional psychosis.

Paton, R. T., & Wilde, G. J. S. The influence of three reinforcement modifications on perseveration in psychotic children. Canadian Psychologist, 1970, 11(3), 261-268.

This study considers an operant conditioning approach in the treatment of schnizophrenic and autistic children and assumes that an operant therapy model can effectively treat childhood psychosis. Three experimental modifications including extinction, punishment, and alternative response are used to extinguish sterotypic behavior. The experimenters concluded that considerable success is achievable in behavior modification if the subjects are punished for an undesirable response while rewards are concurrently withdrawn and reinforcement is provided for a preferred alternative response.

Risley, T. R. The effects and side effects of punishing the autistic behavior of a deviant child. Journal of Applied Behavior Analysis, 1969, 1(1), 21-34.

This experimental study reports on the use of electric shock and other punishments to reduce dangerous and disruptive climbing behavior in a child diagnosed as brain-damaged with an "overlay" of emotional disturbance and autism. Electric shock induced by a hand-held device in a laboratory setting successfully diminished climbing behavior.

The non-permanent effects of the shock treatment were contingent on the experimenter presence with no carry-over in the home situation. Side effects from the punishment were generally in the form of behavioral contrast or "symptom substitution," but mainly desirable.

Rubin, H., Bar, A., & Dwyer, J. H. An experimental speech and language program for psychotic children. Journal of Speech and Hearing Disorders, 1967, 32, 242-248.

The program was designed to test a number of theories regarding the speech and language behavior of psychotic children, to reevaluate and modify these theories in practice. The subjects were 10 psychotic children thirteen and younger. The importance of an external reinforcing agent - social reinforcement of adults was emphasized.

The children were seen twice a week for one hour for four months to 2 years. Candy or food was used as a reinforcer. The therapists worked on articulation, echolalia, reinforcing appropriate words and sentence structure - always emphasizing normal speech. After two years, the children were not functioning verbally, as their chronological peers did; but five of the children's vocalization and verbalization became more mature. Social development also improved, as it is interdependent with speech. Speech and socialization are necessary for continued progress in psychotherapy.

Schell, R. E., & Adams, W. P. Training parents of a young child with profound behavior deficits to be teacher therapists. The Journal of Special Education, 1968, 2(4), 439-454.

This study discusses the use of behavior modification techniques to alter behaviors exhibited by a child diagnosed as being severely emotionally disturbed and possibly autistic.

Baseline data on sterotypies (arm tugging), socially unacceptable behaviors (tantrums), self-help skills, work responsiveness and speech were established. The parents were taught behavior analysis and modification techniques including theory and principles, record-keeping and methods.

Behaviors in all areas improved and a four-month follow-up indicated new behaviors were retained.

Simmons, J. O., & Lovaas, O. I. Use of pain and punishment as treatment techniques with childhood schizophrenics. American Journal of Psychotherapy, 1969, 23, 23.

Nine children diagnosed as suffering from childhood schizophrenia and moderately severe retardation were subjected to painful stimuli as a technique for behavioral control. The painful stimuli used was electric shock and slapping which were both paired with admonishing words. These words then took on the reinforcing powers and replaced the primary stimuli as control techniques. The experimental results indicated that punishment can be used effectively in clinical situations.

Tramantana, J., & Shivers, O. Behavior modification with an echolalic child: a case note. Psychological Reports, 1971, 29, 1034.

This case note reports a modification in the Risley and Wolf (1967) technique of replacing echolalia with appropriate language. A new technique was found necessary when the male subject's echolalic speech (subject mimicked question before he could be prompted for appropriate answer) interferred with the question-answer technique of Risley and Wolf.

To compensate for this while capitalizing on the child's reading ability, the experimenter began holding up cards with the expected answer just as he finished asking the question. When the subject read the answer from the card, he was reinforced with candy. Visual prompts were slowly faded out, and the child was still answering question appropriately.

Turner, R. A method of working with disturbed children. American Journal of Nursing, 1970, 70, 2146-2151.

The method of working with psychotic children used by Wisconsin Children's Treatment Center, is described. It involves using the principles of operant conditioning and twenty-four hour intensive care to reach young children, ages three to seven. The parents of the children are involved in the treatment process and are instructed in conditioning techniques. As the child improves his siblings are taught how to interact with him also. Treatment ends with the gradual transferral of the child back to his home.

Two brief case studies are given to show how the method works.

Williams, C. E. Behavior disorders in handicapped children. Developmental Medicine and Child Neurology, 1968, 10(6), 736-740.

This article begins with a list of references which substantiates the author's summary statement that maladaptive behavior is learned by the same method as adjusted behavior. Cited studies include those related to environmental factors in the etiology of behavior disorders, parental factors and faulty parent/child interactions. After briefly discussing these studies, the author noted that handicapped children have a high incidence of behavior disorders.

The author suggests that further research regarding the mother/child relationship with handicapped children was essential because of the correlation between parental relations and the behavior disorders that occur.

Yeakel, M. H., Salisbury, L. L., Greer, S. L. & Marcus, L. R. An appliance for autoinduced adverse control of self-injurious behavior. Journal of Experimental Child Psychology, 1970, 10, 159-169.

An inflatable canvas bonnet designed to protect both the head and hands of a child who repeatedly strikes himself is described. The device can also be wired to produce an electric shock (aversive stimulus) to the arm when a child strikes himself on the head. Several different methods of operating the switching device are discussed.

CHILDHOOD PSYCHOSIS: TREATMENT

CHEMOTHERAPY

Campbell, M., et al. Acute responses of schizophrenic children to a sedative and a "stimulatory" neuroleptic: a pharmacological yardstick. Current Therapeutic Research, 1972, 14, 759-766.

In this study, the authors propose an abbreviated system for determining effects of a new drug on schizophrenic children compared to effects of standard drugs.

Different phenothiazine drugs were compared for their effects on 15 children age two to five years old, and the results of the study were discussed.

If each student is used as his own control in an acute crossover design, problems of control and matching are eliminated and the comparison process is made simpler. The results indicate that a relatively fast method has been devised for analyzing drug effectiveness on schizophrenic children.

Campbell, M., Fish, B., Shapiro, T., & Floyd, A. Thiothixene in young disturbed children: a pilot study. Archives of General Psychiatry, 1970, 23, 70-72.

This study was conducted as part of a search for drugs to effectively treat schizophrenic children. Pacebos were used to gain baseline data and a blind and non-blind research psychiatrist rated the children on symptom severity scales which included the social, language, affective and motor behavior areas. Through statistical analysis it was found that there was an overall improvement with thiothixene. It proved to be the most potent in the series of 8 drugs tried on this population but most effective on the only non-psychotic child in the group.

Cunningham, M. A., Pillai, V., & Rogers, W. J. Haloperidol in the treatment of children with severe behavior disorders. British Journal of Psychiatry, 1968, 114, 845-854.

The authors carried out a trial of haloperidol with 12 children with severe behavior disorders in an in-patient unit. The results support the view that haloperidol, in appropriate doses, can make some children with behavior disorders easier to manage on the ward. The children were rated by the nurses as significantly less overactive, destructive, restless, and resentful, less aggressive with adults and less disobedient than while on pacebo. They were also rated as teasing and bullying other children less.

The evidence obtained as to the drug's effect on learning was too scanty for any firm conclusions to be drawn. Some slowing down in skilled motor tasks and possibly in processing information might result in a slower rate of work in school.

Faretra, G., Booker, L. & Dowling, J. Comparison of haloperidol and fluphenazine in disturbed children. American Journal of Psychiatry, 1970, 126, 1670-1673.

An experiment to determine the relative effectiveness of haloperidol (H) and fluphenazine (F) in controlling common symptoms which prevent optimum communication between patient and the childhood schizophrenic patient under 12 years of age is described.

Results indicated that both drugs reduced anxiety, H reduced provocativeness and autistic behavior, and neither reduced regressive behavior nor assaultiveness. The authors concluded that H was an effective antipsychotic agent in the treatment of disturbed children. Acceptance of their conclusion is difficult due to the lack of a pacebo group as well as the lack of a description of the kind of evaluation used.

Fish, et al. Schizophrenic children treated with methysergide (Sansert). Diseases of the Nervous System, 1969, 30(8), 534-540.

Methysergide, derived from LSD, is being given to schizophrenic children with positive results (increased alertness, motor vigor, goal-directed activity). This study, focusing on tolerance development, concerned eleven "retarded, autistic schizophrenic" children under five, given methysergide.

Acute dose-range studies (varying doses given one out of three or four days), generated data showing more responsive effect (euphoria, giggling, increased alertness, vocalization and comprehension, decreased withdrawal, etc.) and the least toxic and most therapeutic changes occurred on 2-4 mg. per day. Maintenance dose study (2-4 mg. per day for approximately 42 days), showed improvement on two of eleven children. Positive changes, soon fading, were noted in the other children during the first seven days.

Detailed discussion concerning methysergide's activity and an analysis of the study findings compared to prior research is presented.

Greenbaum, G. H. An evaluation of niacinamide in the treatment of childhood schizophrenia. American Journal of Psychiatry, 1970, 127(1), 89-92.

The author investigated the claims concerning the use of niacin and its derivatives as a cure for schizophrenia. Fifty-seven clinically and psychologically schizophrenic children were included in a doubleblend study. Each of 3 groups were treated with oral medication morning and night for 6 months - group 1 received niacinamide, group 2 received niacinamide and a tranquilizer, and group 3 received a placebo.

Results were rated on a scale of 15 observable behaviors and no significant score differences were recorded.

McAndrew, J. B., Case, Q., & Treffert, D. A. Effects of prolonged phenothiazine intake on psychotic and other hospitalized children. Journal of Autism and Childhood Schizophrenia, 1972, 2, 1, 75-91.

The infrequently recognized side effects (weight changes, tardive dyskinesia, impaired learning and ocular changes) of extended phenothiazine intake by children hospitalized with severe behavior disorders are discussed. The investigation, over a five-year period, included four related studies and involved 86 boys and 39 girls, four to sixteen years old.

Significant weight gains in 29 of 30 patients marked Thioridazine intake. Ten children receiving phenothiazines (high dosage) over a prolonged period, had tardive dyskinesia. Accelerated learning in three boys (Stanford Achievement Tests), occurred after discontinuation of Thioridazine. Two patients showed lens stippling after a relatively moderate cummulative Chlorpromazine intake.

A double-blind individual procedure using the patient as his own control is recommended to facilitate judicious use of phenothiazines.

Simmons, J. Q., Benor, M., & Daniel, D. Variable effects of LSD-25 on behavior of a heterogeneous group of childhood schizophrenics. Behavioral Neuropsychology, 1972, 4, 10-16.

The authors present details of methodology and obtained results for a study in which fifty micrograms of LSD-25 were administered to 17 diagnosed childhood schizophrenics selected to obtain a diverse group of severe disturbance patterns. The authors contend that proper consideration has not been given to the effect of environmental variables on the child's response to the drug.

The authors conclude that, although ten children exhibited improvements (according to data from observed controlled play interaction with toys or without toys), seven children had fear and/or panic responses and exhibited reduced responsiveness to external events and a diminished motor activity in most of the children. While the authors feel that diminished responsiveness casts doubt as to the usefulness of LSD treatment, the positive aspects of the drug use merit continued investigation.

CHILDHOOD PSYCHOSIS: TREATMENT

VARIED APPROACHES

Ayres, A. Sensory integrative dysfunction in a young schizophrenic girl. Journal of Autism and Childhood Schizophrenia, 1972, 2, 174-181.

A case study of a seven-year-old schizophrenic girl with poor sensory perception, disordered postural responses and severe cognitive deficiencies is described. Intervention began with minimal tactile stimulation which encouraged more activity and touching responses. The author makes a direct connection between the child's sensory integrative functions of motor responses and her ability to begin to control and channel her fantasies and psychic functions.

In six months the girl gained 15 points on the WISC verbal test, and scored a .79 on the performance test for which a pre-intervention score was unattainable because of her inabilities in performance areas.

Block, J. Nonverbal messages: a means to verbailization. Teaching Exceptional Children, 1974, 6, 89-97.

Mickey, a four and one-half year-old, labeled "probably psychotic" with "autistic withdrawal" is a student at Pre-Schooler's Workshop, New York, in a speech stimulation program designed to decrease the frustration of non-verbal request through increasing his vocabulary of short, simple words.

This case study, along with others is offered in support of the author's rationale for developing individual programming to meet individual needs. The author stresses the need for special nursery-kindergarten classes to facilitate early identification and professional treatment of 'special problems' by subject age three or four as a deterrent to developing behavior problems that grow more difficult to treat with increased duration.

Doerring, P., & Rutledge, A. L. The communication of psychopathology through three generations, and its treatment in a therapeutic preschool project. Family Coordinator, 1968, 17, 255-263.

An intertheoretical treatment approach for 3-5-year-old children diagnosed as schizophrenic and austistic is described. The psychotherapy program was based on the idea that no one system of treatment could be sufficient to the variety of needs of emotionally disturbed children. The complexity of a treatment approach which attempted to deal with all of the variables was explained. The authors described the results as encouraging, indicating that in addition to other gains over one-half of the children treated are ultimately placed in the public schools and maintained there. The dynamics within the family which reinforce and maintain pathology through three generations were also reported.

Fassler, J., & Bryant, N. D. Teacher observations on using ear protectors for disturbed children. Exceptional Children, 1971, 38(3), 254-256.

(See Fassler, J., & Bryant, N. D. Disturbed children under reduced auditory input: a pilot study. Exceptional Children, 1971, 38(3), 197-204.)

After the above project was conducted, the ear protectors were left in the classrooms for three to five weeks. They were used only when the child desired. Eight of the twenty children showed self initiative in using the ear protectors. The associated changes of improvements in classroom attention, task attention, and task quality improvement were noted. The article suggests having the ear protectors available for use at the teacher's and child's discretion.

Hill, S., Barnett, L. A. A comparison of visual and tactual discrimination learning of retarded and schizophrenic children. The Journal of Special Education, 1969, 5(4), 417-424.

This study determined the course of learning by schizophrenic children as a function of the sense modality used in obtaining information from the environment.

A group of schizophrenic children and a group of retarded children of similar chronological age were compared. Object discrimination and oddity were used to study the tactual and visual learning of the two groups.

Results show that schizophrenic children make more efficient use of touch than vision in orienting to their environment.

Yudkovitz, E., & Rottersman, J. Language therapy in childhood schizophrenia: a case study of a monitoring and feedback approach. Journal of Speech and Hearing Disorders, 1973, 38, 520-532.

A two-year communication therapy program to increase environmental awareness and communicative skills through a monitoring and feedback approach was used with a verbal schizophrenic child with a well-developed vocabulary. The subject was assigned a progressively more difficult series of tasks including listening to words and sounds through a headphone and discriminating between them, and was asked to identify his own verbal errors and eccentricities and monitor them in his daily speech.

In summary the authors stated: "using techniques to open the auditory channel and develop his abilities to engage in auditory monitoring processes" produced an increased awareness of his own communicating behavior in his environment.

AUTISM

AUTISM: DIAGNOSIS

The autistic syndrome. The Medical Journal of Australia, 1972, 2, 229-230.

The article summarizes the results of the Proceedings of the Sandoz Working Party on Definition, Nomenclature, and Classification with regard to autism. This group of child psychiatrists, pediatricians, psychologists, and research workers from Australia and New Zealand meeting at the University of Queensland, August 1969, concluded that: Autism is a clinical state transient or persistent characterized by a failure to develop or sustain normal relationships with human beings, and associated with an exceptional degree of self-involvement commencing in the first 30 months of life.

Other related subjects which were discussed and questioned were: the mother's character, the role of intelligence, precipitating causes in the child who had been normal, and the importance of early treatment.

Albert, R. S., & Davis, A. J. A reliability study of interparental agreement on the Rimland diagnostic check list. Journal of Clinical Psychology, 1971, 27, 499-502.

The author utilizes a 76-item form (Form E-1) of the Rimland check list designed to differentiate "normal," "autistic" or "schizophrenic" children of ages 3 to 7. Parental reports were obtained from 31 couples on their 3-5-year-old children. The children were enrolled in a university pre-school program and had no known mental or emotional problems. Based on Rimland's designation of items as autistic or schizophrenic, the results showed a .72 parental response correlation for the first group of items and .69 correlation for the latter. The findings also indicated a score ratio of 2 to 1 of autism to schizophrenic scores compared to a 3 to 2 ratio of A/S questions. The study provides normative data on which future studies of disturbed population can attempt to base diagnostic discrimination levels.

Allen, J., DeMyer, M. K., Norton, J. A., Pontius, W., & Yang, E. Intellectuality in parents of psychotic, subnormal, and normal children. Journal of Autism and Childhood Schizophrenia, 1971, 1(3), 311-326.

The study researched the hypothesis that parental intellectuality may be responsible for infantile autism. Thirty-three autistic or young schizophrenic, 30 mentally retarded or brain-damaged (diagnosed psychotic), 33 normal children, and the parents for each group were used in the study.

Information about children, parents and the families was obtained from interviews and rating scales were used to measure intellectuality as defined by the authors. Religion, race, SES, and other characteristics were matched for parents of autistic and normal children.

The only significant difference found between parents of normal and autistic children was a greater maternal and paternal age in the autistic group. The authors suggest that their findings may link autistic children more closely with subnormal than normal children in terms of neurological integrity.

Alpern, G. Measurement of untestable autistic children. Journal of Abnormal Psychology, 1967, 72, 6, 478-486.

After discussing current problems in successful test evaluation of autistic children, the author suggests the use of a modified infant development test with which he had tested 14 autistic children. The Infant Items Passed (IIP) that he used successfully with five-year-old autistic children had a high test-retest reliability (.93). Validity was evaluated in conjunction with the Vineland Social Maturity Scale and the author discusses his procedures and results in detail.

Alpern concludes that his subject population is not untestable and that "so-called autistic children are simply severely cognitively handicapped children whose primary difference from other severely defective children is their freedom from motor disabilities."

Asperger, H. On the differential diagnosis of infantile autism. Acta Paedopsychiatrica, 1968, 35, 136-145. (From Psychological Abstracts, 43, 4144.)

The differential diagnosis of infantile autism, childhood schizophrenia, mental deficiency, hearing disturbance and autistic psychopathology are discussed. "All these conditions have a common factor which might be based on the ability of man to be autistic."

Bleger, J. Schizophrenia, autism and symbiosis - psychoanalytical approach. (Spanish.) Psiquiatrica & Psicologia de America Latina, 1972, 18(4), 227-231. (From Psychology Abstracts, 49, 1226.)

The author discusses the problems in differentiating autism, schizophrenia and the symbiotic aspects of schizophrenia. It is suggested that the concept of narcissism be abandoned, that the pathological splitting be considered as the essential condition of schizophrenia, and that schizophrenia be considered as having the character of symbiotic illness.

Boer, A. Application of a simple recording system to the analysis of free-play behavior in autistic children. Journal of Applied Behavior Analysis, 1968, 1, 335-340.

This study offers a detailed description of time-sampling data collection procedures used to measure behavior of four autistic children in a free-play situation. Utilizing oneway mirrors, stenograph machines, and carefully defining the behaviors to be observed, 90% reliability was achieved across several non-professional observers.

Analysis of the obtained data resulted in the author's conclusion that there is a significant lack of random or spontaneous play behaviors in the subject population.

Bryson, C. Systematic identification of perceptual disabilities in autistic children. Perceptual and Motor Skills, 1970, 31, 239-246.

Following a discussion of the lack of specific information on the differential abilities of autistic children the present study was described. Tasks were designed to systematically evaluate the processing information obtained through visual and auditory channels and to determine whether simultaneous presentation of auditory and visual stimuli was facilitative.

The testing procedures were carefully described and results were given in terms of percentage of tasks successfully completed. Of the deficits demonstrated, particular attention was given to the deficit in cross modal association, a process considered necessary for further perceptual and language development. This evaluation method was to be revised for use in comparing perceptual deficit patterns of psychotic and retarded children.

Clancy, H., Dugdale, A., & Rendle-Short, J. The diagnosis of infantile autism. Developmental Medicine and Child Neurology, 1969, 11(4), 432-442.

The study attempts to refine the nine-point scale devised by Creak and others in 1961 which describes and clarifies behavior of psychotic, including autistic, children. The authors explain that the main weakness of Creak's scale is that although it lists symptoms, it does not establish their relative importance or diagnostic usefulness.

The scale was broken down into 54 items which were used to obtain information on one particular aspect of behavior. Six groups of children were used: autistic test group (25), an autistic control group (14), normal control group (25; IQ between 40 and 80), rubella deaf control group (25),

and a cerebral palsied control group (15). Fourteen symptoms were found to be common to the entire test group and are considered by the authors as those most likely present in the condition defined as infantile autism.

The authors believe that there is no pathognomonic symptom of autism; that symptom-complex itself is what is being sought and suggest that seven of the fourteen major manifestations must be present in the first three years of life before a diagnosis of autism can be made.

Davis, B. J. A clinical method of appraisal of the language and learning behavior of young autistic children. Journal of Communication Disorders, 1968, 1, 277-296.

A clinical, non-standardized approach to the evaluation of autistic children, 3 to 6 years of age is described. The behavior of the subjects is described comprehensively in unstructured and structured testing conditions. In the structured situation techniques which permitted environmental control were used. This involved individually adapting the task to each subject to optimize the response as well as to intrude on withdrawal and catastrophic reactions. The results of the evaluation were presented through graphs which identified specific task behaviors.

After a very complete and analytical description of the evaluation methods used the author concluded that the structured situation forced the child to attend to the stimuli but did not enable him to show more appropriate behavior.

Davis, B. J. Differential language behavior patterns and diagnostic evaluation. Journal of Learning Disabilities, 1970, 3, 264-275.

The study stated that examination of young children who did not develop adequate communication skills will demonstrate a similarity in clinical symptoms but that a more in-depth look will show differing response patterns to the same stimuli. Terms were defined as they were used in the study and the evaluation process was described rather specifically. The most significant characteristic of the evaluation was the manner in which the stimuli were directed for the response of certain sensory pathways in order to allow clinical inferences concerning strengths and weaknesses. From the results of the evaluation the children were categorized as autistic, schizophrenic, brain injured or retarded. A behavioral description was included for each group. The value of an evaluation using a structured input was exemplified.

Douglas, V. I., & Sanders, F. A. A pilot study of Rimland's diagnostic check list with autistic and mentally retarded children. Journal of Child Psychology and Psychiatry, 1968, 9, 105-109.

The purposes of this investigation were to respond to Rimland's request for information on autistic children and to ascertain the effectiveness of the check list as a tool of differential diagnosis for infantile autism and mental retardation. The problems in classification and definition were discussed.

The results suggest that the check list can be helpful in differentiating the retarded from the severely emotionally disturbed at an early age. It was further suggested that there may be a continuum between infantile autism and child psychosis.

Ferster, C. Operant reinforcement of infantile autism. In Lesse, J. (Ed.) An Evaluation of the Results of Psychotherapies. Springfield: Charles C. Thomas, 1968, 221-236.

After a vivid description of the behavior of autistic children, the author discusses the ways in which this behavior is related to the child's social and physical environment. Using the principle of operant reinforcement for a framework, how the child's social milieu might have produced the gross deficit is described. He subscribes to the use of a functional analysis of behavior in the complex milieu in order to develop therapeutic procedures which take into consideration the child's behavior in relation to the controlling environment.

His conclusion, based on the hypothesis that the autistic deficit is due to a deficient environment, stated that research on environmental control of operant behavior may lead to the discovery of effective procedures for reshaping behavior of autistic children.

Gubbay, S. S., Lobascher, M., & Kingerlee, P. A neurological appraisal of autistic children: results of a Western Australian survey. Developmental Medicine and Child Neurology, 1970, 12(4), 422-429.

The authors investigated 25 autistic children for the presence of organic disease tested through neurological and EEG examinations. It was noted that there was a higher incidence of post maturity, complicated labors, abnormal deliveries, retarded mobility and speech patterns in the autistic sample than in the matched control group. There were only three normal EEGs in the experimental group (12%) compared to eighteen in the control group (72%). Of the 25 autistic children, 56% had unequivocable brain disease, 28% showed the probability of brain disorders and 16% had no valid evidence of brain disease.

Himwich, H. E., Jenkins, R. L., Fujimori, M., & Narasimhachari, N. A biochemical study of early infantile autism. Journal of Autism and Childhood Schizophrenia, 1972, 2(2), 114-126.

The authors, with an expressed concern for the uncertainty of diagnostic methods for early infantile autism and childhood schizophrenia, designed a study to measure the excretion of 3N, N-dimethyltryptamine (or 5-meth oxy-N, or N-dimethyltryptamine or N-dimethylserotonin) referred to as bufotenin which raises the blood pressure by a vasoconstrictor action and produces psychic effects including hallucinations. Twenty-four hour urinary collections were taken from 12 children and adolescents at home.

From this original group, six children, who are described in detail, were placed in a hospital environment, put on a controlled diet, and urine samples were collected for 14 days. Five out of the six autistic children excreted bufotenin and the authors believe that this is significant in illustrating that some patients who are diagnosed as being autistic share the ability to excrete bufotenin as do chronic adult schizophrenics.

Makita, K., Umezu, K. An objective evaluation technique for autistic children, CLAC scheme. Acta Paedopsychiatrica, 1973, 39, 8-10, 237-263.

A Check List for Autistic Children, CLAC, devised by the authors, is described here as a method of evaluating therapeutic progress resulting from a behavioral conditioning treatment approach. The questionnaire method is described; there is case study discussion and an example of the check list is offered.

Parents and an evaluator fill out the CLAC questionnaire covering eleven areas of concern -- eating, elimination, daily activity, play, speech, interrelationships, etc. The results of the questionnaire are transcribed into a circle diagram divided into concentric circles. When graphed, the proximity of the circles indicate a behavioral profile of the subject. Therapeutic intravention resulting in increased appropriate behaviors enlarge the circle area reflecting progress. This method can be utilized for continuous evaluation.

Ruttenberg, B., & Wolf, E. Evaluating the communication of the autistic child. Journal of Speech and Hearing Disorders, 1967, 32, 314-324.

The authors developed an evaluation scale for rating verbal performance and profiling behavior of autistic children which they call BRIAC (Behavior Rating Instrument for Evaluating Autistic Children). Among the areas assessed by this method are descriptive communication, vocalization and expressive speech, and nature and degree of relationship to an adult, with each of the areas allowing for 10 levels of performance measurement. It is hoped that the BRIAC scale will allow for better assessment and treatment planning for language programs for the autistic child.

Rimland, B. The differentiation of childhood psychoses: an analysis of checklists for 2,218 psychotic children. Journal of Autism and Childhood Schizophrenia, 1971, 1, 161-174.

The article discusses Rimland's form E-2 checklist method for the diagnosis of early infantile autism. Out of 2,218 psychotic children only 9.7% were shown to be autistic by the checklist. Rimland takes this information as confirmation of Kanner's estimate that only 10% of his patients called "autistic" by others were correctly diagnosed. Laboratory studies and demographic data are cited to show that form E-2 is effective in differentiating truly autistic from autistic-type children.

Sahlmann, L. Autism or aphasia? Developmental Medicine and Child Neurology, 1969, 11, 443.

As the therapeutic approaches to primary aphasia and childhood autism vary significantly the author states that an exact differential diagnosis is essential. Of the 60 children who were labeled autistic by the investigating hospital, 36 used language to some extent and 24 were non-communicating. Out of the 24 non-communicating children 16 were found to be suffering from primary aphasia with secondary autistic reactions. When the aphasia was treated this group improved greatly in their personality development.

The speech therapy program utilized special movement training (eurhythmy) accompanied by music, speech and language training with strong use of visual aids. The remaining 44 autistic children did not receive speech therapy.

Saladino, C., Jr., & Sankar, D. Studies on erythrocyte magnesium and potassium levels in childhood schizophrenia and growth. Behavioral Neuropsychiatry, 1969, 1, 24-28.

In this study, levels of potassium and magnesium in the red blood cells of seventy-nine children in four categories (schizophrenia, autistic; schizophrenia-non-autistic; psychotic; primary behavioral disorders) were analyzed and compared.

Significantly lower levels of magnesium were found in the schizophrenia-autistic group as well as abnormal levels of potassium in their red blood cells. The authors discuss previous research finding reporting low magnesium levels in cases of severe pathological problems and compare normal potassium levels to potassium levels found in fluid systems of the autistics.

The authors conclude that the autistic child does not follow normal biochemical patterns of maturation suggesting a possible malfunctioning active transport system. The authors feel that their findings do not show etiology, but only the possibility of another symptom of autism.

Taft, L. T. Parents of autistic children. Developmental Medicine and Child Neurology, 1969, 11, 104.

The author states that there is a need for new and further research which does not define its autistic population only by the diagnostic criteria outlined by Kanner or Creak. Such studies, he states, should be supplemented by reports of subjects significant historical events, developmental and neurological examinations, and a standardized assessment of family adequacy.

He concludes that such data would make it possible to design comparable studies which through pooling this information would lead to the establishment of a numerically significant population.

Treffert, D. A. Epidemiology of infantile autism. Archives of General Psychiatry, 1970, 22, 431-438.

In a five-year survey of Wisconsin's mental health facilities, hospitals, and treatment centers, 280 unduplicated cases of childhood schizophrenia and infantile autism in children aged 12 and under, were identified. Subdivided into three groups, classic infantile autism, psychosis childhood (late onset) and psychosis complicated by demonstrable organicity, the groups were compared on male/female ratio, incidence of birth complications, and parents' age and educational level. The author states that the differences among the groups seem less compeling than the similarities and do not conclusively point toward autism as an entity distinct from childhood schizophrenia.

Van Krevelen, D. A. Early infantile autism and autistic psychopathy. Journal of Autism and Childhood Schizophrenia, 1971, 1, 82-86.

Early infantile autism (Kanner's syndrome) and autistic psychopathy (Asperger's syndrome) are often thought to be identical. The author delineates the differences between autistic psychopathy and early infantile autism and then reports briefly a case he observed where a family had a child suffering from each of the two syndromes. The author suggests that the child with early infantile autism may be an organically damaged child who, if it were not for an organic problem, would have developed into the autistic psychopath of the kind described by Asperger.

AUTISM: DESCRIPTIVE STUDY

The autistic child at home. The Medical Journal of Australia, 1969, 2(17), 836.

The article discusses the increased ability to diagnose and identify autistic children once diagnosed as idiot savant or juvenile schizophrenia. A booklet entitled, The Autistic Child at Home, which describes details of home management, as written by the mother of an autistic child, is reviewed.

The reviewer [illegible] hesitant about the value of a book about autistic children written by a parent because it still has not been determined what a-amount, if any, the parents played in the problems of their child.

_____, Autistic children. Lancet, 1970, 1, 201.

This brief paragraph describes a booklet on autism written by Dr. Lorna Wing as a part of the Family Doctor series. A description of autistic behavior, a listing of accompanying diseases and the problem of diagnosis are discussed. The author delves into the problems of the parent and tries to encourage them to find help for their child. She stresses that there is hope and the possibility of considerable room for improvement if the child is exposed to special training early enough.

_____ Childhood autism. British Medical Journal, 1970, pp. 62-63.

This brief general review of autism provides a description of symptoms, an estimate of the frequency of occurrence, a sentence on etiology, and a short discussion about facilities for treatment and education. Some unsubstantiated generalizations result from the brevity of the article.

Defining autism. Times Educational Supplement, London, 1970, 2, 2889.

The opening of the first fully residential school for autistic children in Great Britain prompted this editorial. The author raises several questions concerning the definition of autism, appropriate treatment methods, and follow-up care for autistic children as they reach adolescence and adulthood. He felt these questions need to be answered, but offered no solutions.

_____ Education for autistic children. Lancet, 1970, 2, 1147.

Present educational conditions for autistic children in England are discussed in this article. A few are receiving a very good education in excellent facilities, while others are receiving no services. Placement is variable, with some children being institutionalized, others being placed in regular or "special" (other handicaps) classrooms, while many remain at home.

The article makes a call for a minimum of 100 new educational units for autistic children to be established throughout the country as soon as possible.

Guidelines on care for autistic children. The Times Educational Supplement, January 17, 1969, p. 138 (Brisbane, Australia).

The article announces the recent opening of a school for autistic children in Brisbane, in support of the establishment of such facilities. It is estimated, based on overseas figures, that there are almost 1,000 autistic children in Australia. Dr. Lyn Borrow, a psychologist of Brisbane, briefly discusses some of the hypothesized causes of autism and some behavior patterns of autistic children. The article is limited.

Parents of psychotic children. British Medical Journal, 1972, 4, 379-380.

The article begins with a brief history of how the syndrome "autism" was named and a brief review of the supposed link between parental attitudes and autism in children. The author takes to task those who have labeled the parents as "cold" and/or "aloof" for their lack of experimental design and clinical objectivity.

The conclusion of this article is that distress in the parents is probably a result of the child's disorder. It is suggested that help for the parents be directed at them, not the child, explicitly. Studies are cited in which it has been shown that a simple and supportive mode of help often resulted in a diminution of the level of the parents social isolation - a major problem.

Plight of Autistic. The Times Educational Supplement, May 30, 1969, p. 1789. (London, England)

The article concerns an explanation of the need for an increased number of treatment centers for autistic children in England. It is estimated that there are at least 3,000 autistic children in Britain, with possible increases of 400 to 500 children per year. An estimated 4,000 autistic

young adults or teenagers are present in the population, however only about 2,000 are receiving help. Research indicates that autistic children can be trained. Provisions for sheltered employment for autistic children is said to be the most neglected area.

Baker, H. Childhood autism. British Medical Journal, 1970, 1, 627.

This letter to the editor was written in response to a previous letter concerning childhood autism. The writer describes six autistic children, their range of IQs, and their subsequent placement in order to demonstrate the ways in which the autistic child's needs differ from those of the mentally subnormal who may show some autistic symptoms. He concludes with a statement of need for facilities for autistic children.

Beresford-Peirse, S. Telling the Christmas story. Special Education, 1970, 59, 15-16.

The article describes the manner in which a school population composed of 18 autistic children 5 to 16 years old presented the Christmas story to their parents. An individual and small group music therapy program had been functioning and using the knowledge of each child's particular strengths and weaknesses, the various parts were assigned. Although many weeks of rehearsal were required, the author felt that the time was valuably spent. In a subjective manner, she reported the gains made by individual children and concluded that these children were more capable of working in a group than was previously thought. Photographs of the children were included.

Boet, A. Application of a simple recording system to the analysis of free-play behavior in autistic children. Journal of Applied Behavior Analysis, 1968, 1, 335, 340.

A very detailed description of the data collecting procedure including the use of a stenograph machine in order to take time-sampling recordings of behavior is presented. The author emphasizes the data collection methods and description of the rating methods for the observed behaviors.

Four autistic children placed in free-play situation were observed through one-way mirrors with several paraprofessional recorders taking data to test reliability. Agreement on all levels of reliability was .9 and above

Analysis of the behavioral data collected indicated a lack of random or spontaneous behavior in this population.

Burger-Prinz, H., & Schorsch, E. Remarks concerning the concept of autism. Nervenarzt, 1969, 40(10), 454-459. (From Psychological Abstract, 1971, 46(3434), 336.)

The article critically examines the scope of autism. Autism's definition is said to be vague since it was first defined as "detachment from reality with a relative or absolute predominance of the inner life," (Bleuler, 1911). It is suggested that the term be used for a specific schizophrenic and/or early childhood lack of a social relation system. For autism, an imaginary world is substituted for the real one whereby the person lives in a "shell", sheltered by his belief in his own importance.

Chambers, C. H. Leo Kanner's concept of early infantile autism. The British Journal of Medical Psychology, 1969, 42(1), 51-54.

The article historically traces the development of the concept of autism. Introduced in 1911 by Bleuler to denote a compound symptom for schizophrenic patients, the term described the child's detachment from reality and their relative and absolute predominance with their inner life. In 1943, Kanner introduced autism as a distinct syndrome in childhood psychosis. Features of the syndrome are given and discussed in terms of how it was tested and developed by Kanner until 1965. A good historical perspective on Kanner's theory is presented.

Churchill, D. W. The relation of infantile autism and early childhood schizophrenia to developemental language disorders of childhood. Journal of Autism and Childhood Schizophrenia, 1972, 2(2), 182-197.

The author presents evidence to support his hypothesis that central language disorders may be the cause of the behavior which identifies autistic and schizophrenic children. However, he clearly states that this does not imply an etiology. In comparison with children who have language disorders, these children also have problems regarding sequencing and word meanings in addition to echolalia and pronomial reversal. The difference between the children seems to be in the severity of the language deficiencies.

Cohen, D. J. Medical care of autistic children. Pediatrics, February, 1973, 51, 278-280.

The article is a commentary on Gabriel and Gluck's article concerning the management of an autistic child during hospitalization for surgery.

The article stresses the need for careful planning for any child, normal or disturbed, who will be hospitalized. The importance of the uses of proper drugs, familiarizing the child with staff and procedures and the presence of the mother as a stabilizing influence for the autistic child are emphasized.

DeMyer, M. K., Pontius, W., Norton, J. A., Barton, S., Allen, J., & Steele, R. Parental practices and innate activity in normal, autistic, and brain-damaged infants. Journal of Autism and Childhood Schizophrenia, 1972, 2, 1, 49-66.

Three theoretical contructs of causality of early infantile autism (nonorganic, organic-environmental and organic) are investigated in this study. Infant care practices and innate activity in the families of 33 autistic and early schizophrenic, 33 matched normal, and 30 subnormal children are compared.

Data indicated that normal and psychotic children's parents were alike in infant care practices, total stimulation scores and factor analytically derived scores. Parents of subnormals were least stimulating and coldest. Autistic and subnormal subjects were below normals in the alertness factor. There were significant differences in brain damage indices (highest in subnormals). The authors' results support the idea of neurological defects in autistic as well as in subnormal children.

Fay, W. H. On the basis of autistic echolalia. Journal of Communication Disorders, 1969, 2, 38-47.

The case studies of 3, 4 and 5 year old children were presented to determine qualitative and quantitative differences in echolalia. The echolalia was attributed to early childhood autism in one case and to delayed alnguage development and developmental language acquisition in the others. The autistic child's performance differed from the others qualitatively in both delivery and content. Delayed echolalia, pronomial reversals, monotonic delivery and subvocal mimicking were excessive features. Several views concerning the basis for these differences are mentioned. The author concludes tentatively that autistic echolalia has its basis in verbal comprehension difficulties associated with an urge to maintain, rather than reject, social contact.

Ferster, C. B. The autistic child. Psychology Today, 1968, 2, 6, 34-37.

This article presents a general overview of autism, summarizes theories of etiology, discusses the rarity of the syndrome and presents the common behaviors exhibited by autistic children. The author then goes into comparative depth concerning treatment of autism with behavioral therapy -- the use of reinforcement and punishment.

Ferster discusses his work at the Linwood School in Maryland, where he and Jeanne Simons are collaborating on treatment programs for the autistic child. The case of one specific girl in one specific stiuation is used to illustrate the type of behavior-oriented therapy at the school.

Freedman, D. A. Congenital and perinatal sensory deprivation: some studies in early development. American Journal of Psychiatry, 1971, 127, 1539-1545.

The development of locomotion in children with congenital blindness, congenital rubella and perinatal sensory deprivation and discussion of the normal development of the object concept is presented. Evidence is cited supporting Escalone's organismic-environment model of development which asserts that the organism state at any given moment interacts with the environment creating a "pattern of concrete experience" to which behavioral or personality adaptations are made. The organism state continually changes due to maturational processes and incorporation of the "concrete experiences."

The author states that the congenitally blind interact with their environment in ways likely to result in a pattern of concrete experiences eventuating in a syndrome similar to autism, accounting for the 25 percent syndrome incidence in this population. According to the model, compensation in the environment for the organismic factor should allow for normal development.

Freitag, G. An experimental study of the social responsiveness of children with autistic behaviors. Journal of Experimental Child Psychology, 1970, 9, 436-453.

The extent to which children with autistic characteristics were sensitive to interpersonal events was explored. The author thoroughly described the methods used to ascertain retarded, normal, and autistic children's responsiveness to a marble dropping task after either positive or negative experiences with an adult.

The results indicated that autistic children show sensitivity to personal interaction even when interactions are separated in time. This contradicts Rimland's view of autistic cognitive impairment effecting relationships with people. It was also stated that further investigation of autistic responsiveness was needed before an organic hypothesis is rejected.

Freshchi, D. Where we are. Where we are going. How we're getting there. Teaching Exceptional Children, 1974, 6, 89-97.

The author stresses the importance of taking, graphing and analyzing data on a daily basis in order to get necessary feedback and observe behavioral change. Sample charts are presented showing different patterns of behavioral change collected at a school for autistic and neurologically impaired children.

A classroom case study is described with accompanying charts and an explanation of how teachers can use their charts to correctly alter classroom procedures in order to help each child achieve maximum progress is offered.

Frith, U. Studies in pattern detection in normal and autistic children. II Reproduction and production of color sequences. Journal of Experimental Child Psychology, 1970, 10, 120-135.

Three experiments were utilized to test the hypothesis that many behaviors of autistic children can be explained by a deficit in the central processing of input. The procedure was described in detail, and a statistical analysis is presented.

The conclusion drawn was that autistic children are "largely insensitive to temporal structure and respond to any kind of patterned input as if it were random." Various autistic behaviors including behavior stereotypes, difficulty in language and social interaction, are explained using this hypothesis.

Frith, U. Cognitive mechanisms in autism: experiments with color and tone sequence production. Journal of Autism and Childhood Schizophrenia, 1972, 2(2), 160-173.

Experiments concerning color and tone sequence production are described. The subjects included 20 autistic children ranging in age from 5.2 to 17.4 years, 20 normal children who were matched according to their mental age (MA), and 10 subnormal.

The author concluded that in the autistic child's appropriate level of mental development, the crucial flexibility in applying temporal rules appears to be lacking. Together with the knowledge of their excessive adherence to rules which seems to be resistant to modification, one might form a basis for diagnosing the autistic and severely subnormal.

Frith, U., & Hermelin, B. The role of visual and motor cues for normal, subnormal and autistic children. Journal of Child Psychology and Psychiatry, 1969, 10(3), 153-163.

The article presents a study using 20 autistic, 20 subnormal (IQ below 50 with no autistic symptoms), and 20 normal subjects to compare their performance on two perceptual motor tasks when conditions maximized or minimized visual information. The first task, using a jigsaw puzzle, demonstrated that the performance was significantly improved in all but autistic children of low perceptual age when visual cues were maximized. The second experiment evaluated the role of added visual information in relation to nonvisual information. It showed that autistic children were least impaired by the absence of visual cues. The authors note that in autistic children there appeared to be a dissociation between excellent motor performance and relative failure to use additional visual information in the same task.

Gabriel, H. P., & Gluck, R. Management of an autistic child undergoing open heart surgery. Pediatrics, Feb., 1973, 51, 251-253.

This article discusses the management methods used to prepare and maintain an eight-year-old autistic boy for open heart surgery. An emphasis is placed on preplanning, rigid structure, and interdisciplinary communication by the hospital staff as good guidelines for preventing undue trauma for the psychotic child.

A complete case description is given including 1) the medical diagnosis of the patient, 2) a listing of pre-op and post-op medications and the rationale for administering them, and 3) the manner in which various members of the hospital team related to the child.

Success, as a result of a cooperative staff effort, is reported both in terms of medical procedures and in minimizing disturbance of the patient's emotional condition.

Goodman, J. A case study of an "autistic-savant": mental function in the psychotic child with markedly discrepant abilities. Journal of Child Psychology and Psychiatry, 1972, 13, 267-278.

The author describes an autistic-savant's mental functions in terms of visual discrimination, memory, and associated processes. Comparisons with other autistic and idiot-savant children are made. The subject's abnormal motor, sensory, social developments, erratic behavior, and obsessive behaviors are also described.

After discussing the subject's strengths (ability to read and spell) and weaknesses (failure to form cause-effect relationships and to identify words which describe emotional and physical states, comparative words, etc.) the author suggests that this abnormal development can be partly attributed to a deficient motivational system which may be derived from an early disturbance of insensitivity to somatic stress (hunger, thirst, etc.).

Greenfield, J. A child called Noah, Life, 1970, 69, 17, 60-72.

This article contains selected excerpts from the author's book of the same title. In diary form, the author, the father of an autistic boy, relates his problems and frustrations in trying to find help for his son while attempting to keep his family together under the strain of living with a "hopeless" autistic child.

Gregory, D. R. "Russell and I" (an experience with autism). Perspectives in Psychiatric care, 1971, 9, 29-31.

The author describes her experience with Russell, an eight-year-old autistic boy at a Center for Retarded Children in Singapore. The subject's characteristics are listed as remoteness, self-destructive head banging, twiddling, odd posture, and humming. Causality is discussed in terms of Bruno Bettleheim's Theory, 1967. The child's early experiences with his mother and reactions to siblings are analyzed as to their effect on his present condition.

The author's "treatment" involved the creation of a secure and trusting one-to-one relationship with Russell, allowing him to experiment in situations where he could define himself and his bodily limitations.

Progress involved a reaching out to his peers for cooperative play and an increased responsiveness to others. Spontaneous expressions of emotion were seen as making a diminished fear of others.

Hermelin, B., & Frith, U. Psychological studies of childhood autism: can autistic children make sense of what they see and hear? Journal of Special Education, 1971, 5, 107-117.

An analysis and delineation of perception, memory, and language pathology in autistics are presented. The subjects were between 7 and 15 years old and two control groups were used. Autistics had a tendency to recall the last words of sentences better than the entire sentence. Generally, it was found autistics have good immediate recall of unconnected words or digits, suggesting that their main impairment may be in those processes which categorize and organize material. Other studies were conducted regarding patterning and concluded that, in the absence of structured input, all children, impose simple patterns of their own. It can be assumed that the deficit found with autistics may account for a wider area of cognitive dysfunction.

Hermelin, B., & O'Connor, N. Measures of the occipital alpha rhythm in normal, subnormal and autistic children. British Journal of Psychiatry, 1968, 114, 603-610.

The authors monitored the EEG's of ten autistic, ten matched normal, and ten Down's syndrome children while subjecting them to six separate conditions of light, darkness, and sound. Autistic and normal children displayed the same percentage of alpha waves in darkness while Down's syndrome children displayed more alpha. Response to light did not differentiate the groups, although autistic children did adapt more readily to light conditions, showing a relative lack of persistent cortical responsiveness (as measured by the EEG) as well as a lack of behavioral responsiveness. No group adapted to sound, and autistic children were relatively more aroused by continuous auditory stimulus than either of the other groups.

Hermelin, B., & O'Connor, N. Spatial coding in normal, autistic, and blind children. Perceptual Motor Skills, 1971, 33, 127-132.

The experiment tested whether tactile stimulation would be coded in terms of visual location, even when no visual cues were available. Ten blind, ten blindfolded, ten sighted normal, and ten sighted autistic children were tested. The results indicated that space is not represented solely in visual terms. All groups used information most readily available from the incoming sensory data rather than internally represented schemata of visually organized space. Autistic children responded more to touch than to sound.

Hutt, C. Exploration, arousal and autism. Psychologische Forschung, 1969, 33(1), 1-8.

Five children, diagnosed as autistic according to Kanner, were used to test an earlier theory of Hutt's concerning the exploratory activity of autistic children in the presence of a completely novel object (based on Berlyn's theory of the motivational impact of stimulus events). The autistic children engaged in sound-contingent responses, and it is suggested that the social situation may cause the child's general "shut off" behavior. With initial exposure to the novel subject, the child's exploration was limited. However, with more exposures, exploration increased to a level comparable to normal children. It is also suggested that when high arousal situations are presented, an autistic child will revert to familiar patterns of behavior "sterotypes."

Kanner, L. Autistic disturbances of affective contact. Acta Paedopsychiatrica, 1968, 35(4-8), 98-136.

The article describes in detail what the author considers to be the autistic child. His inability to relate to people and situations, his aloofness, his delayed speech, his desire for sameness and his ritualistic or stereotypic behaviors all form a picture of Kanner's classic autistic child. The autistic child's parents are described as aloof and intelligent.

Kanner, L. Follow-up study of 11 autistic children originally reported in 1943. Journal of Autism and Childhood Schizophrenia, 1971, 1(1), 119-145.

The lives of 11 children first reported in 1943 as autistic are brought up-to-date. Their histories are summarized in terms of developmental data, family constellations, clinical observations over several years, varieties of professional planning, and their present status. Attention is given to subsequent studies of early infantile autism with the ever-increasing facilities for research in nosology, biochemical and general systematic implication, and therapeutic amelioration. The need for continued follow-up studies of autistic children is emphasized.

Kanner, L., Rodriguez, A., & Ashenden, B. How far can autistic children go in matters of social adaptation? Journal of Autism and Childhood Schizophrenia, 1972, 2, 1, 9-33.

The article presents in detail the case histories of eight boys and one girl selected from 96 children diagnosed autistic (Kanner, 1943, 1971) at ages ranging from 2-10 to 8-1 years at The John Hopkins Hospital prior to 1953. The subjects selected were those past adolescence and found to be capable of functioning in society.

Differences in environmental and maturational issues and present personality and behavior structures between this group and other autistics who did not achieve societal integration are discussed. All autistic subjects grew up before specific techniques to remedy autism were implemented. No specific factor differentiated the two groups, although all the group achieving integration had language before the age of five.

The authors recommend additional follow-up and follow-along studies to analyze current therapies.

Kolvin, I. Infantile autism or infantile psychoses. British Medical Journal, 1972, 3, 753-755.

The author presents a summary of the characteristics, symptoms, and etiology of autism. He distinguishes infantile autism (or infantile psychoses) from late onset psychoses which he describes in a subsequent article. In summarizing treatment approaches, the author asserts their relative ineffectiveness by reporting a 10% prognosis for satisfactory intellectual and social adjustment.

Lanouziere, J., & Laine, T. Object relation in the autistic child: essay on the economy of relational movements in the psychotic child (French). Psychiatrie de l'Enfant, 1972, 15 (2), 287-389. (From Psychological Abstracts, 1974, 51, #1259, p. 145-146.)

The authors see autism both as a symptomatological entity and as a defensive system built by the child to allow him to live in his psychosis. Problems with personal identity and environmental constancy are seen as major obstacles to normal development in autistic children.

A case history of an 11-year-old institutionalized boy is detailed and discussed in relation to fantasy development and family roles.

Levinson, E., et al. Observations during the simultaneous psychiatric hospitalization of a three and one-half year-old autistic girl, her psychotic mother, and 11-day-old brother. Laval Medical, 1969, 40, 896-904.

The authors describe a longitudinal naturalistic observation study of a psychotic mother, her newborn infant and her three and one-half year-old autistic daughter simultaneously hospitalized. Observation revealed the mother's problems in daily care of her infant son, her feelings of responsibility for her daughter's autism, and her fear that the son would develop the same problem.

The autistic daughter was placed in foster care upon discharge from the hospital and the infant went home with mother. The infant developed no language and was later found to be deaf. It was concluded that the infant's lack of language development was a result of deafness, not mishandling by the mother, despite evidence of considerable maternal and ego deprivation.

Observer reliability was seen as a basic methodological problem by the authors, but they felt that some important information was collected concerning the woman's mothering abilities.

Metz, J. R. Stimulation level preferences of autistic children. Journal of Abnormal Psychology, 1967, 72, 6, 529-535.

Citing research statements concerning the autistic child's unusual sensitivity to stimulation of his senses, the author investigated preferred level of auditory stimulation in autistic children giving them free choice and control.

Ten autistic, ten schizophrenic and ten exceptionally successful children participated in an experiment on an elaborate apparatus, described in detail, designed to test volume preferences of these children. As a control, 30 normal children were tested separately.

Results showed autistic children prefer higher levels of auditory stimulation than schizophrenic or normal children. The author discusses possible explanations for these findings and possible implications of treatment programs in respect to findings on stimulation levels and autistic children.

Money, J., Bokrow, N. A., & Clarke, F. C. Autism and autoimmune disease. Journal of Autism and Childhood Schizophrenia, 1971, 1(1), 146-160.

The rare phenomenon of early infantile autism in the presence of autoimmune disease is demonstrated in a case study. The youngest son had a multiple diagnosis of autism, Addison's disease, and moniliasis; the next older child had hypopara thyroidism, Addison's disease, moniliasis, and diabetes mellitus; the next oldest has hypopara thyroidism, Addison's disease, moniliasis, and alopecia totalis. The oldest child was symptom free.

Newton, S. The child I know well. Parent's Voice, March 1968, 18, 17-18.

This is a reprint of an essay written by a 14-year-old girl about an autistic child that she knows. She describes his early developmental problems and details the problems his mother had in trying to find decent, appropriate education and training for him. It is a warm and compassionate statement of one family's troubles in attempting to obtain good care for their autistic child.

Ornitz, E. M. Childhood autism: a review of the clinical and experimental literature. California Medicine, 1973, 118, 21-47.

The author reviews the literature on childhood autism, discussing the various terms used to label the condition, the clinical characteristics of autism, the clinical course of autism, and the behavioral syndromes related to autism. Other conditions with which autism is confused, prenatal and perinatal factors related to autism, the family background of the autistic child, prognosis, and problems in early recognition of the problem are also mentioned. The author emphasizes the various diagnostic examinations for autism and the various methods of treating the condition. The study is an informative and competently prepared overview of autism.

Ornitz, E., & Ritvo, E. Perceptual inconstancy in early infantile autism. Archives of General Psychiatry, 1968, 18, 76-98.

The authors postulate that children with early infantile autism, certain cases of childhood schizophrenia, and children with unusual sensitivities, have perceptual problems stemming from the same pathologic process whose disabilities are variants of a unitary disease.

The authors trace the onset of the disease from pregnancy through infancy to the end of the fifth year noting crucial points of development missed by children suffering from the diseases related to early infantile autism.

They then list syndromes of the disease - disturbance of perception, heightened awareness of sensory stimuli, heightened sensitivity and irritability, motor problems and problems of communication and interaction.

The authors note changes in the syndrome after early childhood. This may be evidence of a physiological origin of the syndrome because it changes as the body matures.

O'Connor, N., & Hermelin, B. Cognitive deficits in children. British Medical Bulletin, 1971, 27, 227-232.

Autistic and subnormal children were examined to determine cognitive deficits. It appeared that many subnormal children have problems coding incoming information because of insufficient memory categories to which incoming stimuli could be referred. Autistic children, however, seem to have an extensive memory system, but have difficulty coding the data because of an inability to sort incoming information into appropriate categories by selectively extracting important features. The authors suggest that further studies be done in this area to determine the exact problem more completely.

Ornitz, E. M. Disorders of perception common to infantile autism and schizophrenia. Comprehensive Psychiatry, 1969, 10(4), 259-274.

The results of clinical, psychological, and neurophysiological investigations suggested that a breakdown of the homeostatic regulation of sensory input occurs in early infantile autism and in schizophrenia. The studies conclude that a profound disturbance of perception is found in both autistic children and schizophrenic adults, and that this perceptual dysfunction may be common to and underlie the divergent clinical pathology present in these conditions.

Ornitz, E. M., et al. The EEG and rapid eye movements during REM sleep in normal and autistic children. Electroencephalography and Clinical Neurophysiology, 1969, 26, 167.

The authors present data concerning rapid eye movements during REM sleep in a series of six age-matched normals (19-45 months) and eight autistic (22-47 months) children as measured by the EEG.

Their investigation reveals autistic children having a large amount of rapid eye movement. Mean number per minute was equal to .260 as compared to .053 for normals.

Ozawa, I. Pharmacological treatment for handicapped children: Handicapped children and drugs. (Japan) Japanese Journal of Child Psychiatry, 1972, 13, 231-235. (From Psych Abstracts, 1974, 52, #5939, p. 757.)

Arguments are forwarded against the selling of ineffective drugs to parents of autistic children. The author further criticizes physicians for being unaware of the philosophical problems in treating severely handicapped children who he feels possess virtually no possibilities of becoming productive citizens. Problems of treating abnormal behavior with chance therapy are outlined and discussed.

Parrish, M. C. Parents of autistic children: their common needs and attitudes. Corrective Psychiatry and Journal of Social Therapy, 1969, 15(4), 14.

The study determines commonalities of attitudes toward child-rearing among parents of autistic children. Instruments utilized were the EPPS and the Parental Attitude Research Instrument which indicated that the greatest need for both parents was for deference and abasement. The parents adhered to similar child-rearing practices. Mothers were generally characterized as being obsessive, irritable, and self-abasing, while the fathers showed a strong need for deference.

Rendle-Short, J. Childhood autism. British Medical Journal, 1970, 1, 627-628.

The author offers a critique to a previously published letter by Sim (1970, 1, 300). Noting that "autistic" is a broadly-used label, he describes this population as falling into three groups. Group one consists of children exhibiting the classical behaviors with no evidence of retardation and with early onset in the first year of life. Group two encompasses children who show autistic symptoms secondary to mental retardation. Group three contains children who exhibit autistic behaviors that are, however, easily traceable to a traumatic situation. The author states that group one, if treated early enough offers the greatest hope for full treatment.

The letter to the editor concludes with a discussion of the problems presented to researchers by pressure groups interested in various causes or particular diseases.

Ritvo, E. R.et al., Cantwell, D., Johnson, E., Clements, M., Benbrook, F., Alagel, S., Kelley, P., & Ritz, M. Social class factors in autism. Journal of Autism and Childhood Schizophrenia, 1971, 1, 297-310.

Social class factors were studied in families of 148 patients hospitalized at the UCLA Neuropsychiatric Institute from 1961 to 1970. The 74 patients diagnosed autistic, were matched for age, sex, and time of admission with 74 hospitalized for other neuropsychiatric disorders. Statistical comparisons of parental data revealed no significant differences in mean age at time of patients's birth, educational or occupational level, income, social class indexes, or distribution.

These findings differ from most of the previous studies on social class factors in autism. The authors suggest that future studies will support their findings as more culturally and socioeconomically heterogeneous populations are surveyed.

Ritvo, E. R., Yuwiler, A., Geller, E., Ornitz, E. M., Saeger, K., & Plotkin, S. Increase blood serotonin and platelets in early infantile autism. Archives of General Psychiatry, 1970, 23(6), 566-572.

In a highly technical paper an experiment is described that attempts to link neurochemical regulatory factors within the central nervous system to the neurophysiological abnormalities of early infantile autism. Atypical ego development, symbiotic psychosis and childhood schizophrenia are also linked to chemical malfunctioning. The experiment compared the serotonin level in the blood of 24 autistic subjects and 24 normal subjects who were age matched. The serotonin level was signficantly higher in the autistic children than in the controls.

Roth, E. F. An exploratory study of the psychodynamics of mothers who have autistic children. Dissertation Abstracts International, 1970, 31, 474.

The study explores the personality characteristics of mothers whose children have been diagnosed as autistic. A review of theoretical and empirical sources and a sampling of practitioners was done to formulate a theoretical model. This data was correlated with characteristics of 25 mothers who had both an autistic and a nonautistic child. The data revealed that neonatal needs place an exorbitant demand on some maternal personalities in a time of stress. The stress culminates in an inability to provide the nurturing experiences needed to socialize the child.

Rutter, M. Concepts of autism: a review of research. Journal of Child Psychology and Psychiatry, 1968, 9, 1-25.

The author summarizes the different etiological views of autism, discusses the characteristics of autism that set it apart from other childhood disturbances and traces the various professional opinions concerning origin, treatment and prognosis.

It is a comprehensive summary of thought on the disorder of autism and the debate about its etiology, diagnosis and treatment.

Schachter, M. Evolution et pronostic de l'autisme infantile precoce (Evolution and prognosis of early infantile autism). Acta Paedopsychiatrica, 1968, 35(4-8), 188-199. Psychological Abstracts, Jan.-June, 1969, 4239, 43, 411.

(From Abstract) The article reports a study of an autistic child from age 4-1/2, when diagnosis was made, to age 17. Although there was normal intellectual development, with school failure, the subject shows undisputable psychoinfantilism at emotional and social levels.

Schreibman, L., & Lovaas, O. Overselective response to social stimuli response to social stimuli by autistic children. Journal of Abnormal Child Psychology, 1973, 1, 2, 152-168.

The authors, continuing previous research on stimulus overselectivity, a link between the inability of autistic children to respond to more than one stimuli in a multiple stimuli presentation to possible causes of subject deviant social behavior.

Following the description of an experiment demonstrating that seven autistic boys with a mean age of 11.0 years made stimuli discriminations based on only one of a peculiar combination of stimulus components, the authors discuss their findings in relation to autistic social avoidance and socializing deficits. The processing of multiple stimuli is necessary for normal growth and socialization. Lacking this ability, children might develop "autistic" traits and deficits.

Sim, M. Childhood autism. British Medical Journal, 1970, 1, 300.

This is a letter to the editor in response to a previously printed article on autism. In it the author attacks the efforts of individuals to set up widespread facilities for the autistic population because autistics are a disproportionately small percentage of children needing special assistance.

He states that since parents of autistic children are usually upper middle class, perhaps they should spend their own money on private facilities rather than trying to obtain public monies already in short supply. He concludes by suggesting that the intelligent and articulate people who are asking for this public money are, in effect, taking it from the poor and inarticulate who need it.

Small, J. G., DeMyer, M. K., & Milstein, V. CNV responses of autistic and normal children. Journal of Autism and Childhood Schizophrenia, 1971, 1, 215-231.

Five autistic children, aged 3-1/2 to 6 years, and five age-matched normal children participated in experiments to investigate the "contingent negative variation" in autistic children. The results of the experiments were ambiguous. Autistic and normal children reacted differently in the test situation, but the experimenters were unsure of the reasons.

The article is written in technical terms which are not defined and is not easily understood by the layperson.

Sogame, S., & Okunomiya, Y. Social and educational problems during development of autistic children: A case report on an autistic child observed for nine years in residential setting. (Japan) Japanese Journal of Child Psychiatry, 1972, 13, 213-214. (From Psych Abstracts, 1974, 52, #5607, p. 716)

Based on a long-term study of an autistic boy from ages 10 to 18 years old, the author details some possible basic traits of the syndrome. He feels that autistic children do not see the world as a meaningful whole and have difficulties understanding the world in relation to themselves. They also suffer from reading comprehension deficits, fluctuation of functioning levels and changes in stimulus threshold.

Sonninen, A., Siltala, P., & Sirala, M. On the fundamental prerequisites of language development. Journal of Communication Disorders, 1970, 3, 1-27.

The article is an extensive case study of a young boy who was diagnosed autistic. It follows him from birth to age thirteen. The authors describe his therapy from their three separate viewpoints--as a speech therapist, a psychologist, and a psychiatrist. The authors explain their methods and the progress the child made as a result of those methods.

Sorosky, A., Ornitz, E., Brown, M., & Ritvo, E. Systematic observations of autistic behavior. Archives of General Psychiatry, 1968, 18, 439-449.

The authors observed six autistic children in 16 sessions placed in a socially isolated situation. Behavioral data was taken on four variables: 1) sterotypic behaviors exhibited; 2) rate of occurrence; 3) effects of illness or emotional upset; and 4) rate of effect when the child is task engaged. Through inter-observer comparisons, reliability data was considered high.

The authors found no set pattern or short-term predictability of occurrence for the stereotyped behaviors and noted that only illness was successful in altering types and amounts of these behaviors. Over a long observational period, time spent engaged in any of these stereotypical behaviors was consistent and predictable.

Results were discussed in relation to several theories of autism, i.e., need for sensory stimulation, home situation, etc.

Spencer, D. A. Education for autistic children. Lancet, Dec. 19, 1970, vol. 2, 1309.

In this short letter to the editor, the author protests the placement (across Great Britain) of autistic children in mental-subnormality hospitals not really designed to meet their needs. Approximately one out of seven autistic children is assigned to these hospitals because other residential accommodations are not available. The author states that more educational units for autistic children are needed.

Spence, M., Simmons, I., Brown, N., & Wikler, L. Six ratios in families of autistic children. American Journal of Mental Deficiency, 1973, 77, 405-407.

The authors state that the ratio of males affected with autism outnumbers females by a 3.8:1 ratio. They found that birth order was not a significant factor in autism.

The authors also report a tendency toward same sex siblings in families of autistic children and that sex ratios of the parents' family were as well distorted toward more members of one sex.

The authors state this evidence is inconclusive and that the information does not take all possible variables into account.

Stone, F. H. The autistic child. Practitioner, 1970, 205, 313-318.

The article gives a brief overview of autism: its symptoms, nature and cause, treatment, prognosis, and special problems. The author gives a fairly comprehensive picture of the diagnostic and treatment problems and offers suggestions on procedures and methods for dealing with them.

The article is short and informative and can be readily understood by the layperson even though a few medical terms are included.

Sussman, S., & Sklar, L. The social awareness of autistic children. American Journal of Orthopsychiatry, 1969, 39, 798-806.

Interactions between children and staff were observed in a day school for autistic children. Analysis of the interactions showed that both workers and children were highly responsive to each other and to stimuli in the situation. The children seemed aware that certain behaviors would be tolerated in some situations but not in others and demonstrated this awareness by displaying more tantrum behaviors in situations where they were likely to get their own way than where they knew they would be forced to conform.

The study refutes the idea that autistic children are unknowing, passive beings who are acted upon, but do not themselves act.

Swallow, J. The dental management of autistic children. British Dental Journal, 1969, February 9, 128-131.

The author relates important factors in treating autistic children based on his experience with nine subjects over a period of eight years. He stresses the importance of parent/dentist understanding as to goals of treatment and emphasizes a lack of concern over treatment length, noting that an autistic child may need to make several trips to the dentist before he feels comfortable enough to open his mouth.

The author describes the routine of normal treatment and derivations important in giving adequate care to autistic children. He also emphasizes the importance of preventative dental health because of the special problems presented by an autistic child once dental problems occur.

Tanguay, P. A pediatrician's guide to the recognition and initial management of early infantile autism. Pediatrics, 1973, 51, 5, 903-908.

Stressing the importance of early identification and referral of autistic children, the author provides fellow pediatricians with a concise detailing of important characteristics of autism and mentions recent trends in the field. Clinical characteristics are listed, some etiological theories are presented, and suggestions for managing the family and the child after a diagnosis is made are discussed.

The author comments briefly on the avilability of treatment centers and types of treatment now being used. In dealing with the prognosis of autistic children, the author cautions against institutionalization before other day school or residential placements are tried.

Tomaro, N. Learning to live happily with Jimmy. Exceptional Parent, 1972, 1, 6, 36-39.

A mother in detailing how her family adapted to living with her autistic son, suggests ways to structure the autistic child and his family's living environment. Physical punishment is avoided while verbal directions accompanied by a physical "put through" of desired behaviors are repeated for each incident of undesirable behaviors including bed-jumping, object throwing, roaming the house at night, etc. The idea of offering the autistic child a running commentary on what is happening in his life is offered both to prepare him for future events and to help him interpret his world.

There is no mention of educational programs or of possible theories of etiology. The article focuses instead on dealing with the child, at home, on a twenty-four hour basis.

Ward, A. J. Early infantile autism: diagnosis, etiology, and treatment. Psychological Bulletin, 1970, 73, 350-362.

Examination of the current literature on early infantile autism reveals a general confusion regarding diagnosis, etiology, and treatment. The author suggests four diagnostic criteria: 1) lack of object relations from birth, 2) lack of use of speech for communication, 3) maintenance of sameness via sterotypic behaviors, and 4) lack of neurologic or developmental dysfunction. In discussing etiology, the author notes that the literature emphasizes the effects of either overstimulation or understimulation at early developmental stages and the intactness of the perceptual apparatus. He asks four questions relevant to achieving a greater understanding of the etiology of early infantile autism and points out that there are two subgroups of autistic subjects - "organic" and "psychogenic."

Evaluation of different treatment methods reveals very few successful reports except when a very active, intrusive, and pleasant therapeutic approach was used.

Wassing, H., & Van Krevelen, D. The question of intelligence of autistic children who are talented in drawing. Acta Paedopsychiatrica, 1968, 35(4-8), 215-227.
(From MR Abstract, 1970, 7(1927), 568.)

Intelligence tests administered to an artistically talented 12-year-old autistic boy show that all other abilities were tested as EMR, thus his talent was not a sign of latent ability. The authors compare a child like this to what they call SMR (savant mentally retarded) who are particularly gifted in one area but fall below normal in all others.

Weiner, B., Ottinger, D., & Tilton, J. Comparison of the toy-play behavior of autistic, retarded, and normal children: a reanalysis. Psychological Reports, 1969, 25, 223-227.

The authors examined differences among autistic, retarded, and normal children by observing their behavior in toy-play settings with a stated purpose of testing complex manner of collecting and analyzing data. Methodology was a multidiscriminant functional analysis which

allowed for consideration of ten categories of toy-play behavior individually and intercorrelationally analyzed from the same data.

The authors concluded that this technique has practical utility as a diagnostic and evaluative measurement instrument.

Weiss, H., & Born, B. Speech training or language acquisition? A distinction when speech training is taught by operant conditioning procedures. American Journal of Orthopsychiatry, 1967, 37, 1, 49-55.

The authors state that children taught to speak through operant techniques are not acquiring true language as they lack the ability to speak novel thoughts or carry on spontaneous conversations. A case study of a seven-and-one-half-year-old autistic-like boy with little functional speech but "disappointingly slight" gains in communitative, social conversation. The authors call for more detailed research into more specific treatments for severe language disturbances.

Weninger, O. An example of misuse and abuse of diagnostic labels. Involvement, 1973, 6, 1, 12-13.

A brief discussion of the misuse of labels is followed by a case study of an "autistic" boy whose parents refused to follow professional recommendations for institutionalization of their child. Receiving help and support from friends and neighbors, the couple kept their son at home, taught him necessary living skills and encouraged him through a public school education.

Following this case study, the author looks deeper into the problems of labeling and strongly warns against accepting behavioral techniques as the only way to deal with disturbed children.

Whitlam, V. The autistic child. Canadian Nurse, 1970, 66, 44-47.

This article, general in nature, outlines major manifestations of autism-speech problems, preservation of sameness, fascination with objects to the exclusion of people, etc., and discusses etiological theories. The author enumerates several of the techniques that she and her colleagues use with autistic children in a residential setting. Methods of "getting to know" the child, conducting short school sessions, and working with parents are discussed. The article is written for general nursing personnel who have had little contact with the problems presented by an autistic child.

Wing, L. The handicaps of autistic children - a comparative study. Journal of Child Psychology and Psychiatry, 1969, 10, 1-40.

The study suggests that autistic S's are often multiply handicapped, and have problems similar to those experienced by the congenital aphasic, i.e., speech comprehension and spatial disorientation. Further indicated is a preference for the proximal senses (touch, taste, smell) similar to that of congenitally blind/deaf children.

The author states that thorough examination of past history of a child concurrent with study of his present behavior is important in devising individual management and education methods. Included in the article is a 17-page "booklet" to chart the behavioral growth and general progress of such children.

Wolf, E. G. Autistic children: a study of their responses to auditory stimuli. Dissertation Abstracts International, 1969, 29(11-12), 4427-4428.

The study concerned the development of practical methods of describing sound reception of autistics; quantifying responses in such manner that comparisons of changes could be made; then introducing interventions so it could be seen if and how children could be helped to utilize their receptive senses more efficiently and appropriately. Sixteen children were rated on an original scale which measured behavioral changes in response to auditory stimuli.

An implication of the study is that it is possible for autistic children to show positive changes in their sound reception behavior given the proper therapeutic environment.

Wolf, E. G., & Ruttenberg, B. A. Sound acceptance in the autistic child. The Journal of Special Education, 1968, 2(4), 353-359.

After the authors formulated a sound reception scale to study the autistic child's inability or disinclination to accept environmental sounds, they evaluated the performances of 34 children (age 4-12) who had been diagnosed as having early infantile autism.

It was found that although the area of sound reception can be profiled, there was much inconsistency and variation among the children. From the individual profiles, it was possible to note patterns of improvement. The authors felt that further knowledge relating to hearing dysfunctions and sound acceptance is needed before an effective treatment can be theorized.

Wolf, E. G., Wenar, C., & Ruttenberg, B. A. A comparison of personality variables in autistic and mentally retarded children. Journal of Autism and Childhood Schizophrenia, 1972, 2, 1, 92-108.

A comparison and discussion of the personality variables of 48 boys and 19 girls (32 autistic and 35 severely mentally retarded), ages four to twelve is presented. The Behavior Rating Instrument for Autistic Children (BRIAC) was used to evaluate the subjects on five scales: 1) nature and degree of relationship to an adult as a person; 2) communication; 3) vocalization and expressive speech; 4) drive for mastery; and 5) psychosexual development.

The retarded group scored higher in each area and correlations between scales for this group were higher.

The findings suggest that the mentally retarded (particularly those with Down's Syndrome) are less disturbed and better integrated than autistics, are more amenable to remedial techniques, and that the autistic child is fragmented and compartmentalized in his functioning.

Wolff, S. M., & Morris, L. A. Intellectual and personality characteristics of parents of autistic children. Journal of Abnormal Psychology, 1971, 77, 155-161.

Five sets of parents with autistic children and two sets with schizophrenic children provided familial demographic, intelligence and personality data. Demographic and IQ findings did not support the premise that the parents of autistic children have remarkably high intelligence and achievement levels. The concept that parents of autistic children are "emotional refrigerators" was not borne out on personality tests.

Results did suggest that Rimland's retrospective checklist was useful in distinguishing between autistic and schizophrenic children.

Young, S. T. Visual attention in autistic and normal children: effects of stimulus novelty, human attributes, and complexity. Dissertation Abstracts International, 1970, 31(2-B), 922-923.

The author presents two experiments in which she compared autistic and normal children's visual attention to stimulus novelty, human attributes, and complexity. When novelty was defined as "incongruous rearranged stimuli," the normal children paid more attention to the novel stimuli while the autistic children were more attentive to the familiar stimuli. When novelty

was defined as newly presented material, both groups of children were more attracted to novel stimuli. The presence of human attributes in the stimuli had little effect on the visual attention of either group of children. The author suggests that autistic children display attentional patterns similar to those found in normal children much younger than those included in the present investigation. However, no evidence was cited to support this idea.

AUTISM: ETIOLOGY

AUTISM: ETIOLOGY
GENERAL AND INTEGRATIVE

Bumberra, R. Infantile autism: the puzzle. Journal of Psychiatric Nursing and Mental Health Services, 1973, 11, 6, 26-28.

This article lists prominent researchers in autism accompanied by brief statements of their etiological theories. The author compares and contrasts the major theoretical schools, organicists and environmentalists, and questions the lack of demonstrable autism in foundling children supposed naturals for autism because of severe maternal deprivation. Further interdisciplinary study is suggested to facilitate a more comprehensive understanding of etiology.

Huges, W. G. A critical study of the nature of infantile autism. Dissertation Abstracts International, 1971, 31(11-12), 7599.

The study reviews and evaluates the dominant research in the field of autism, looking toward a more carefully refined understanding of its nature, causality and dynamics. The general syndrome, the theories of psychogenic, and biological etiologies are described. The research on cognitive dysfunction, parental influence, flawed reticular formation and a neuron entelechy theory of cognition is reviewed.

Intensive research involving the disciplines of neurology, physiology and medicine is desirable.

Kanner, L. Early infantile autism revisited. The Psychiatric Forum, Usdin, G. (Ed.), New York: Brunner & Mazel, 1972, pp. 27-32.

The author discusses the developments over the past 25 years in the study and treatment of children with early infantile autism. He points out that, contrary to popular opinion, he never identified parents of these children as the primary source of the problem, but instead ascribes the source of the problem as "an innate inability to form the usual, biologically provided affective contact with people." The author notes that knowledge of the etiology of autism is still extremely limited, that theories about it are just theories, and that treatment methods are still experimental. He suggests that care must be taken to insure that pseudo-scientific, premature information not be received as any kind of final answer.

Lobascher, M. E., Kingerlee, P. E., & Gubbay, S. S. Childhood autism: an investigation of aetological factors in twenty-five cases. British Journal of Psychiatry, 1970, 117(540), 525-529.

The authors selected 25 children diagnosed autistic on the nine criteria Creak Scale (1964), a matching control group of 25 clinically normal children and compared them on several different aspects of their background and development including labor history and family psychological history.

It was found that the experimental group suffered from a much higher percentage of complicated labors and long gestation periods. There was a significantly higher rate of psychiatric problems in the family history of the experimental group. All but four children in the experimental group showed signs of neurological dysfunctions.

Masters, J. C., & Miller, D. E. Early infantile autism: a methodological critique. Journal of Abnormal Psychology, 1970, 75(3), 342-343.

Whether or not early infantile autism can be considered a diagnostic entity given current testing, selection and criteria is questioned. Rimland's Diagnostic Checklist for Behavior Disturbed Children, Form E-2, is examined and clinical diagnostic procedures are criticized as well as the accuracy of parental data. It is concluded that early infantile autism has yet to be empirically demonstrated as a unitary behavior disorder distinguishable from other severe child behavior disorders.

AUTISM: ETIOLOGY

NON-ORGANIC

Clancy, H., & McBride, G. The autistic process and its treatment. Journal of Child Psychology and Psychiatry, 1969, 10, 233-244.

The authors view autism as a developmental process operating within a family. They focus on the mother as a causal factor and describe her as a certain type: easily upset, insecure, etc.

The authors feel it is possible to interrupt the autistic process by dealing with the family as a unit. Treatment involves primary socialization and development of language skills in a hospital setting where mother and child are residents. Therapy is viewed as an attempt to re-establish or working symbiotic mother-child relationship in order to let the child progress.

Fay, W. H. On normal and autistic pronouns. Journal of Speech and Hearing Disorders, 1971, 36, 242-249.

The author critiques the ego theory position on the pronoun reversal in autism and asserts a developmental grammatical approach to this etiological issue. The ego theory asserts that the use of "I" results from differentiation of self and non-self and failure to use "I" indicates a failure of ego development. Pointing out that it is logically incorrect to attribute proper pronoun use to an inferred event in self resolution, the author states that the failure to use pronouns properly cannot be attributed to nonoccurrence of an "inferred requisite event." Based on grammatical analysis of speech development the author presents a treatment approach for teaching pronominal use to autistics. This consists of initially focusing on "you" and then the you/me dichotomy, utilizing the child's echolalia and stressing comprehnsion rather than use of pronominal relationships.

Fraknoi, J., & Ruttenberg, B. A. Formulation of the dynamic economic factors underlying infantile autism. Journal of the American Academy of Child Psychiatry, 1971, 10, 713-738.

The authors present a psychoanalytic picture of autistic development. The model, drawn from the authors' treatment of 25 autistic children and their families, considers congenital and environmental psychological factors contributing to the etiology of autism. Particular emphasis is devoted to the mother's role; its origin in her own childhood experiences and her current psychological economic factors.

Autism is seen as a failure to establish early object relations and treatment suggestions involve the re-structuring of this developmental stage.

Freitag, G. An experimental study of the social responsiveness of autistic children. Dissertation Abstracts, 1969, 30(2), 866.

The study compares the social responsiveness of three groups of 45 autistic, nonautistic, and normal boys. The boys interacted with a male adult following positive, negative, or no initial contact. The autistic and retarded boys' social responsiveness did not differ significantly; however, both groups responded significantly less than the normal group. The most responsiveness followed positive rather than negative or no initial contact. The results suggested an interpersonal interpretation of autism rather than one based on cognitive defect since nonautistic children also exhibit the same response patterns.

L'Abate, L. Early infantile autism: a reply to Ward. Psychological Bulletin, 1972, 77, 49-51.

The author attacks the overview of the autism literature compiled by Ward. She disputes Ward's conclusion that autism is a syndrome resulting from a lack of environmental stimulation in the child's developmental history. Studies are cited which Ward did not include in his review supporting the author's interpretation of autism as resulting from "bidirectional, transactional effects" between mother and child based on "constitutional and temperamental factors."

Lutz, J. Towards the understanding of infantile autism as a disturbance of ego consciousness, ego activity and ego imprint. Acta Paedopsychiatrica, 1968, 35(4-8), 161-177.

The autistic child is seen as suffering from intrapsychical disturbances. Autism is defined as a disintegration of personality, a loss of ego control. The causes of the ego disturbances could be predispositional, organic or reactive. No definite theory of cause is given, although the article indicates that treatment of autism should be based on the concept of autism as an ego disturbance.

Mandel, H., Marcus, S., Roth, R., & Berenbaum, H. Early infantile autism: a pre-ego psychopathology and case report. Psychotherapy: Theory, Research and Practice, 1971, 8(2), 114-119.

The authors relate a case study of an autistic boy and through his description detail their view of the etiology of autism, visualizing it as a fixation at the earliest, pre-ego stage of development associated with

a need conflict. Because parents of autistic children are highly verbal, they tend to relate to the infant verbally rather than physically thus depriving him of significant security experiences received only through physical mothering. Left unstimulated, the infant must find some form of self-stimulation. Without a resolution of his physiological and psychological need for physical attention, he is unable to make the transformation from physical energy to psychic energy. The authors see this as a possible causal factor of autism which they state is a distinct psychopathology.

Moore, D. J. A response to R. A. Webb's comments. Psychological Review, 1972, 79, 280.

The author accuses Webb of citing developmental truisms from normal development while ignoring the abnormality of the autistic syndrome. The author contends that imprinting is an "all-or-nothing-at-all" phenomenon and that the high intelligence of the autistic child leads to a failure to imprint properly. Autism supposedly does not exist in degrees because less intellectually potential children undergo normal imprinting after birth while autistic children suffer from sensory deprivation during a critical period experienced prior to birth.

Moore, D. J., & Shiek, D. A. Toward a theory of early infantile autism. Psychological Review, 1971, 78(5), 451-456.

It is hypothesized that in early infantile autism, because the fetus has inherited potential for intellectual superiority, the child is developmentally ready for imprinting with human behaviors before birth. Instead of being imprinted after birth at critical periods in cerebral development, as do normals, these advanced fetuses are imprinted on the restrictive environment of the uterus. It is suggested that this atypical imprinting leads to the syndrome of early infantile autism. There is a need for research in the area of determining intellectual levels of parents who have autistic children; as well as a need to test the neurophysiological aspects of autism. Additional study of the relative organic and behavioral effects of environmental deprivation on primates during critical periods of primary socialization is needed.

Ogdon, D. P., Bass, C. L., Thomas, E. R., & Lordi, W. Parents of autistic children. American Journal of Orthopsychiatry, 1968, 38, 653-658.

The hypothesis that parents of autistic children differ from parents who have all normal children is presented. A comparison of 12 mothers and 10 fathers of autistic children with 12 mothers and 10 fathers of normal children was made using the Rorschach test according to Kapper's method of administration and scoring. Results indicate that the Rorschach evaluation of the parents of autistic children essentially concur with previous descriptions of these parents. The study did not support the perfectionistic, obsessive-compulsive characteristics of the parents of autistic children.

Ornitz, E. M., Wechter, V., Hartman, D., Tanguary, P. E., Lee, J. C. M., Ritvo, E. R., & Walter, N. D. The EEG and rapid eye movements during REM sleep in babies. Electroencephalography and Clinical Neurophysiology, 1971, 30, 350-353.

Electroencephalogram (EEG) readings and rapid eye movements (REM) were recorded for six infants during REM sleep periods. Compared to previously reported readings for normal and autistic children, the amount of EEG activity of 10.5 to 15.0 c/sec. (this term not defined) was significantly greater in babies than in normal children but was similar to that of autistic children. The mean duration of REM bursts was significantly shorter in babies than in normal children but was similar to that in autistic children. These results suggest that autistic children suffer from a maturational lag in development.

Roth, E. F. A psychodynamic model of the mother of the autistic child. Smith College Studies in Social Work, 1972, 42, 175-202.

The author views the autistic syndrome as resulting from the interaction of an atypical child with a particular psychodynamic mother type characterized by a maternal feeling of being threatened by the child's control of her life as well as a threat to her psychic economy. The model (developed by the author) describes topographic, genetic, structural, economic, dynamic, and adaptive perspectives of the mothers' psychodynamics. The author supports his position by noting a congruence between the model parameters and 25 mothers of autistic children, based on interview ratings. The major drawback of the validation study is the lack of comparative data for mothers of normal and non-autistic disturbed children.

Webb, R. A. A comment on D. J. Moore & D. A. Shiek's "Toward a theory of early infantile autism." Psychological Review, 1972, 79, 278-279.

The author rejects the hypothesis of Moore and Shiek that autism results from imprinting of intellectually superior and developmentally precocious fetuses to the uterine environment. Webb asserts that while instinctive process are important in early socialization, they require perceptual organization which could not be accomplished in the uterus. Studies are cited to indicate that no relation exists between intellectual potential and developmental precocity. The author expresses the hope that future research on autism will abandon the emphasis on intellectual potential as a causative factor.

AUTISM: ETIOLOGY

ORGANIC

Boullin, D. J., Coleman, M., & O'Brien, R. A. Abnormalities in platelet 5-hydroxytryptamine efflux in patients with infantile autism. Nature, 1970, 226, 371-372.

The hypothesis that 5-hydroxytryptamine (5-HT) of the reticular formation might be involved in the etiology of autism was tested. The description of the physiology involved and the procedures used was presented in highly technical language. The conclusion indicated that abnormalities in 5-HT synthesis may play a part in autism and other psychotic syndromes.

Boullin, D. J., Coleman, M., O'Brien, R. A., & Rimland, B. Laboratory prediction of infantile autism based on 5-hydroxytryptamine efflux from blood platelets and their correlation with the Rimland E-2 score. Journal of Autism and Childhood Schizophrenia, 1971, 1, 63-71.

A correlational study relating the efflux of 5-HT from blood platelets to a subject's score on the Rimland E-2 scale is presented. The E-2 scale is used to diagnose autism with a score of +20 or higher taken as the criteria. In an experimental study the authors were able to correctly diagnose 9 out of 10 psychotic children based on a measurement of the subjects' 5-HT efflux ratio compared to a normal base rate. The details of the procedure and other chemical studies with autistic children are discussed.

Boullin, D. J., & O'Brien, R. A. Uptake and loss of ^{14}C-dopamine by platelets from children with infantile autism. Journal of Autism and Childhood Schizophrenia, 1972, 2(1), 67-74.

Previous research has pointed to a link between presence of ^{14}C-5-HT in the blood and a diagnosis of early infantile autism. The authors examine the possibility of a link between autism and ^{14}D-dopamine - an element of blood important in diagnosis of Parkinson's disease.

The authors conclude that their results, while not statistically significant, do raise many questions about the relationship of blood chemistry and reaction to foreign chemicals and a possible diagnosis of infantile autism. They call for more research along these lines in hope of establishing a means of diagnosing autism from blood analysis.

The article is written in technical language with biological and biochemical references undefined.

Chess, S. Autism in children with congenital rubella. Journal of Autism and Childhood Schizophrenia, 1971; 1, 33-47.

Parents of 243 preschool children who suffered from congenital rubella were asked to assess the psychological consequences of this disorder. Diagnoses were based on retrospective data from the parents, behavioral observation in a playroom and previous medical diagnoses. From Kanner's description of the autistic syndrome ten children were classified as displaying infantile autism, and another eight partially manifesting the syndrome.

The author notes that this is a disproportionately high incidence compared to normal populations. It is suggested that CNS damage resulting from the rubella virus may be responsible for the high incidence postulating an organic etiology for autism.

Creak, M. Reflections on communication and autistic children. Journal of Autism and Childhood Schizophrenia, 1972, 2, 1, 1-8.

The article cites difficulties in attaching the spoken word to social and personal aspects of the world as the autistic child's major defect. Current trends in thinking concerning communication and autism are briefly delineated.

The author suggests the possibility that neurological malfunctioning is responsible for the autistic child's language deficit. The concomitant inability to understand results in confusion and an increase in autistic behaviors. She proposes research in the area of communication--how it is established and its importance in the development of the human being as the key to the problem.

Creak, M., & Pampiglione, G. Clinical and EEG studies on a group of 35 psychotic children. Developmental Medicine and Child Neurology, 1969, 11(2), 218-227.

The patients for the study were identified as 'autistic' children (i.e., withdrawn, non-communicating) ages 5-17 years. The study used the electro-encephalograph to assess the incidence of recent or long-standing changes in cerebral function and to correlate the type and distribution of EEG abnormality and clinical features for each case. Of the 35 tested, 6 had EEGs within normal limits, 29 showed un-uniform abnormal features although there was no indication of a rapidly progressive cerebral illness in any child. No uniform correlation could be found between EEG abnormalities and the reported paranatal events, occurrence of early childhood illness or accidents, delay in milestones or significant achievements in early childhood, absence or development of speech, or the final outcome or recovery of the child.

The study suggests that organic factors are probably of particular importance, but not yet adequately proven to be so. The authors also suggest that the prognosis is poor for the majority of cases.

Easson, W. M. Symptomatic autism in childhood and adolescence. Pediatrics, 1971, 47, 717-722.

The author contends that the most common form of autistic syndrome "symptomatic autism" results from a severe constitutional, physical, or perceptual handicap which forces the child to relate to the world in a unique and self-centered manner. This syndrome is most likely to develop in completely or partially deaf or blind children. The author feels that early diagnosis and treatment can allow the child to develop his available sensitivities and lead a productive life. Failure to obtain treatment before ten years of age, however, results in intellectual crippling and a poor prognosis, similar to children with "infantile" or "regressive" forms of autism.

Elgar, S., & Wing, L. The autistic myth. Times Educational Supplement, May 12, 1972, 2973, 14.

The authors state that autistic children have a complicated pattern of abnormal behaviors and have difficulty in speaking as well as understanding the spoken language. These children resist change and have difficulty in their early years developing social relationships. It is stated that previous studies favor organic rather than hereditary or environmental causes for autism.

The authors conclude that early childhood autism is a condition of multiple neurological impairments involving language, perception and organization of movements. The children have difficulty copying complex movements, use peripheral vision rather than central vision, and are non-verbal.

Fay, W. H. On the echolalia of the blind and of the autistic child. Journal of Speech and Hearing Disorders, 1973, 38(4), 478-489.

In an attempt to determine the etiology of echolalia a parallel between echolalic autistic children and echolalic blind children is made. The author questions whether an echolalic child is verbally adept and socially reaching or verbally deficient and socially rejecting. It is concluded that the direct effects of sensory restriction in the blind child and perhaps perceptual restriction in the autistic child tend to delay or preclude acquisition of meaning and structure systems of language. The author views echolalia as a human drive to participate in communication by speech.

Friedes, D., & Pierce, P. On the neuropsychology of the Kanner-Rimland Syndrome. Hypothesis and case report. Proceedings, 76th Annual Convention, APA, 1968, 3, 477-478.

The inadequacy in the rationale of using operant methods for a deficiency which has been viewed by Rimland and Wing as a central nervous system dysfunction is cited. A neuropsychological hypothesis is then offered which focuses on the autistic child's aversion to body stimulation and visualized other symptoms as the consequences of this deficit. The syndrome is seen as an imbalance between two pathway systems: 1) the non-specific which produces intense arousal on stimulation; and 2) the specific which actually inhibits arousal. The treatment consists of sensory enhancement through increasing amounts of body stimulation in the form of brushing and stroking to use the specific pathway.

Geiger-Marty, O. Study on early infantile autism. Acta Paedopsychiatrica, 1968, 35, 178-188.
(From MR Abstract, 1969, 6(1905), 668.)

The author states a definite organic etiology to what he calls "Kanner's disease." The retardation of maturation of the cortico-thalamic area of the brain is responsible for failing eye-contact, failing control of perception, and the void of emotionality of the child with Kanner's disease. Autism is considered by the author as a secondary symptom of organic causality.

The author stresses the importance of research in new methods for dealing with the problem and the necessity of very early diagnosis.

Goodwin, M. S., Cowen, M. A., & Goodwin, T. C. Malabsorption and cerebral dysfunction: a multivariate and comparative study of autistic children. Journal of Autism and Childhood Schizophrenia, 1971, 1, 48-62.

The authors investigated a number of biochemical reactions in a group of 15 autistic children with a control group consisting of siblings of autistic children, normal children, and normal and schizophrenic adults. Independent interpretation of the study would require familiarity with the test procedure - TCDC electrophysiologic recordings, histamine wheal response tests, eosinophile counts, and blood cortisol determination.

The authors assert that the pattern of findings indicate that infantile autism is biologically distinct from the class of schizophrenias. Characteristic "DC bursts" suggest that autism is primarily a neurological dysfunction. Biological abnormalities indicate that autistic children may be sensitive to dietary imbalances.

Halpern, W. Impairment of auditory regulation and rubella. Journal of the American Medical Association, 1970, 214, 916.

The author states that some cases of developmental aphasia, with autism as the presenting behavior, can be variants of the congenital rubella syndrome.

Happy, R., & Collins, J. K. Melanin in the ascending reticular activating system and its possible relationship to autism. The Medical Journal of Australia, 1972, 2, 1484-1486.

The authors investigated the differing iris pigmentation levels in 25 autistic and 69 Australian-born normal Caucasians in New South Wales. The autistic children diagnosed according to the World Health Organization classification, were residents of a children's center. Using a scale which ranged from light (hypopigmented - light, medium, and dark blue) to mid-range (green and hazel) to dark (hyperpigmented - light, medium, and dark brown), the authors found the following:

	light	mid	dark
control group	32	11	26
autistic group	16	6	3

The results illustrate an underrepresentation of brown-eyed autistic children suggesting a possible metabolic error in autism that could be mirrored in minimal iris pigmentation.

Himwich, H. E., Jenkins, R. L., Fujimori, M., & Narasimhachari, N. A biochemical study of early infantile autism. Journal of Autism and Childhood Schizophrenia, 1972, 2(2), 114-126.

The authors, with an expressed concern for the uncertainty of diagnostic methods for early infantile autism and childhood schizophrenia, designed a study to measure the excretion of 3N, N-dimethyltryptamine (or 5-meth oxy-N, or N-dimethyltryptamine or N-dimethylserotonin) referred to as bufotenin which raises the blood pressure by a vasoconstrictor action and produces psychic effects including hallucinations. Twenty-four hour urinary collections were taken from 12 children and adolescents at home.

From this original group, six children, who are described in detail, were placed in a hospital environment, put on a controlled diet and urine samples were collected for 14 days. Five out of the six autistic children excreted bufotenin and the authors believe that this is significant in illustrating that some patients who are diagnosed as being autistic share the ability to excrete bufotenin as do chronic adult schizophrenics.

Hutt, S., & Hutt, C. Stereotypy, arousal and autism. Human Development, 1968, 11, 277-286.

The article summarizes different studies by the authors concerning causes, functions and effects of stereotypies. Stereotypies are defined as repetition in an invariant pattern of certain physical actions having no observable goal.

The authors found a positive correlation between increased environmental complexity and increased stereotypies by the child. It was concluded that stereotypies subserve a neurophysiological system whose function is to regulate levels of arousal externally and internally.

Judd, L., & Mandell, A. Chromosome studies in early infantile autism. Archives of General Psychiatry, 1968, 18, 450-457.

While citing the literature linking chromosome abnormalities with the causes of schizophrenia and psychosis, the authors note a dearth of research concerning possible relationships between these phenomena and autism. The experiment involved eleven children, diagnosed as autistic (Rimland) and showing no apparent organic malfunction, who underwent chromosomal analysis.

No consistent variation appeared and no conclusive evidence was found to link chromosomal irregularities to the causes of autism.

Kahn, A. Thyroid dysfunction. British Medical Journal, 1970, 4, 495.

The author discusses his work dealing with biochemical investigations on autistic children. In his work on the measurement of thyroid functioning he examined 62 children that were diagnosed autistic according to the nine-point Creak scale. Forty-five were found to be hypothyroid and 2 were hyperthyroid.

The author draws from this his hypothesis that some children, diagnosed autistic are, in fact, suffering from thyroid dysfunction. A biochemical disturbance is present in the hypothalmic-pituitary-thyroid-adrenal axis which manifests clinically as an autistic syndrome.

Autism can be a feature of thyroid dysfunction, and thyroid disturbance can produce childhood psychosis or autistic syndrome.

Koegel, R. L., & Wilhelm, H. Selective responding to the components of multiple visual cues by autistic children. Journal of Experimental Child Psychology, 1973, 15(3), 442-453.

Characteristics of autistic unresponsitivity are described. An experiment using 15 autistic and 15 normal subjects trained to respond to two visual cues is changed so that a response to only a single visual cue is required. The autistic children showed evidence of over-selectivity. It is concluded that this overselectivity of complex cues may be an explanation for autistic children's inability to acquire complex behavior and learning skills.

Morrison, D., Miller, D., & Mejia, B. Effects of adult verbal requests on the behavior of autistic children. American Journal of Mental Deficiency, 1971, 75, 510-518.

The authors attempt clarification of autistic children's failure to respond to verbal requests. They cite alternative theories that response failure is due to a sensory-perceptual defect such as developmental receptive aphasia or alternatively an effort by the child to avoid interpersonal relations. They believe that the second theory would predict variations in performance with changing content while the former would predict uniform failure to perform in response to verbal requests. Presenting data on two boys, ages 8 and 10, having histories of various diagnoses with the latest in autism, results of verbally-directed discrimination tasks provide evidence of significant variation in correct responses to different objects. Though the nature of preferred objects is unclear, the evidence is that a preference exists and that the task is highly emotionally charged for the subjects, thus supporting the interpersonal avoidance hypothesis.

Ornitz, E. M. Vestibular dysfunction in schizophrenia and childhood autism. Comprehensive Psychiatry, 1970, 11(2), 159-173.

The study describes the clinical symptoms and the experimental evidence that suggest that there is vestibular dysfunction (the central vestibular mechanism modulates sensory input and maintains a constancy of perception) in both schizophrenic adults and autistic children. Perceptual distortions are induced experimentally by motion in normal Ss. These distortions are strikingly similar to aberrant responses in autistic children and schizophrenic adults. It is concluded that if the vestibular system is dysfunctional, perceptual distortions of one's own body and one's place in space result.

Ornitz, E. M., et al. The auditory evoked response in babies during REM sleep. Electroencephalography and Clinical Neurophysiology, 1969, 27, 195.

The study attempts to determine to what extent an increased amplitude of auditory averaged evoked response (AER) during rapid eye movement (REM) sleep might reflect an earlier maturational level. The findings reported were that 6-12-month-old babies fail to show the depression of auditory AERs characteristic of children during the eye movement bursts of REM sleep.

Ornitz, E. M., Brown, M. D., Sorosky, A.D., Ritvo, E.R., & Dietrich, L. Environmental modification of autistic behavior. Archives of General Psychiatry, 1970, 22, 560-565.

This study considers the question of what influence environmental stimulation has on autistic stereotypic behavior. The environment of six autistic children was manipulated in complexity by the experimenter operating a spinning top and an infra-red viewer. It was found that the motility disturbances (stereotypic behavior) were not significantly influenced by the presentation of these stimuli. The study concludes that the autistic motility disturbances are relatively independent of environmental influence but may be serving as either a source of self-stimulation or a manifestation of central nervous system excitation.

Ornitz, E. M., Tanguay, P. E., Lee, J. C. M., Ritvo, E. R., Sivertsen, B., & Wilson, C. The effect of stimulus interval on the auditory evoked response during sleep in autistic children. Journal of Autism and Childhood Schizophrenia, 1972, 2, 140-150.

The article presents a highly technical report of research on the application of a neurological response measurement technique to a sample of ten autistic children. The research is undertaken to gain support for a theory of faulty sensory input modulation as a causative factor for some forms of schizophrenic and autistic symptoms. The authors measured neural response to a pair of clicks separated by an interstimulus interval (=500 M Sec). While the authors found some significant differences in the ratio of recovery (return to base rate for second click compared to first click), the study represented only the first stage of the investigation and no conclusion was drawn.

Rimland, B. On the object diagnosis of infantile autism. Acta Paedopsychiatrica, 1968, 35(4-8), 146-160.
--Psychological Abstracts, Jan-June, 1969, 4238, 43, 410-411.

(From Abstract) The article reports a new finding in autism that at age 5 1/2 the autistic syndrome changes markedly. The author hypothesizes that autism is a cognitive dysfunction resulting from homozygous vulnerability, which also relates to the ability to focus attention and ignore distractions.

Rimland, B. Comment on Ward's "early infantile autism." Psychological Bulletin, 1972, 77, 52-53.

The author discusses four major areas of disagreement with Ward's autism literature review. These include: 1) Ward's failure to use the term autism in the highly restricted manner advocated by Rimland; 2) differing interpretation of Kanner's criteria for autism; 3) Ward's use of only six of Rimland's 15 criteria for differentiating autism and schizophrenia; and Rimland's view of biological causation in autism. Rimland cites studies indicating a "biochemical defect in the blood platelets of children having classical infantile autism," and indicates that his own current research has shown autistic children to "respond very well" to high dosage vitamin treatments.

Ritvo, E. R., Ornitz, E. M., & LaFranchi, S. Frequency of repetitive behaviors in early infantile autism and its variants. Archives of General Psychiatry, 1968, 19(3), 341-347.

The etiology of perceptual inconstancy caused from a neuropathologic disruption in children diagnosed as being early infantile autistic or schizophrenic, is hypothesized as also being responsible for the motility disturbances (twiddling, gesturing, stereotypes) seen in these children. The authors suggest that a significant consistency in the frequency of repetitive behaviors among subjects and an internal stability to the frequency of behavior would support this hypothesis.

Fifteen children, diagnosed as having early infantile autism and showing repetitive behaviors were measured in five categories of behavior, flapping, clapping, oscillating objects, repetitive hitting of a stationary object with the palm of the hand, and gross body movement.

Results of the study indicate that fatigue is not an important factor, no frequency changes were noted related to the child's overt emotional state and almost all hand and arm behavior was consistent both within and between subjects.

The authors suggest that involuntary CNS systems are operative, thus, repetitive behaviors are neither under conscious or unconscious ego control, but rather result from a combination of several neuropathological processes. They conclude that there is a disequilibrium between excitatory and inhibitory control of motor behavior in autistic children.

Rutter, M. Concepts of autism: a review of research. Journal of Child Psychology and Psychiatry, 1968, 9(1), 1-25.

The author reviews the literature concerning autism in an attempt to assess the validity of hypotheses presented by Kanner (1943), and extends his review to a consideration of many causal theories. He concludes that infantile autism is not related to schizophrenia and is not primarily a disorder of social relationships. Mental subnormaility is not in itself sufficient to account for autism, and psychogenic or faulty conditioning mechanisms are seen as unlikely primary factors in etiology. The role of brain damage and genetic factors is uncertain. The author supports the hypothesis that causality of autism is related to a primary defect in language or coding ability noting that more research is needed for confirmation.

This article comprehensively presents an excellent review of research and literature concerning the nature of autism and provides an extensive bibliography.

Rutter, M., & Bartak, L. Causes of infantile autism: some considerations from recent research. Journal of Autism and Childhood Schizophrenia, 1971, 1, 20-32.

Experimental, clinical, and longitudinal studies of autistic children at all levels of intelligence have demonstrated a severe and extensive defect in language comprehension, in central functions associated with language, and in the processing of symbolic or sequenced information. It is suggested that the language/cognitive defect constitutes the primary handicap in autism, while the behavioral and social abnormalities arise as secondary consequences. The cause of the language/cognitive defect remains unknown, but may be related to some form of organic brain damage or disorder. It is not determined yet whether the language/cognitive defect is a sufficient cause for autism or whether interaction with particular personality attributes or family environment is necessary to produce the pathology.

Sage, W. Autism's children. Human Behavior, 1974, 3, 16-26.

The author compares and contrasts the theories of etiology and treatment of autistic children of Bruno Bettleheim and Bernard Rimland. Using quotes from both men and tracing the current status of research and treatment in the field of autism, the author states that belief in Bettleheim's psychogenic theories has died. New research is emphasizing the possibilities of organic etiology and behaviorally oriented treatment.

An interview with Ivar Lovaas is accompanied by a detailed description of his treatment approach and his responses to many accusations concerning his therapy techniques from Bettleheim and his supporters.

Taft, L. T., & Cohen, H. J. Hypsarrhythmia and infantile autism: a clinical report. Journal of Autism and Childhood Schizophrenia, 1971, 1, 327-336.

The case histories of five children who display autistic behaviors and who have a history of infantile spasms (hypsarrhythmia) are given in detail. The authors postulate that there is an interrelationship between the two disorders and offer several different ways this relationship might exist. They point out that these are only speculations and that future research needs to be geared in this direction.

Valente, M. Autism: symptomatic and idiopathic - and mental retardation. Pediatrics, 48, 495-496.

In this letter to the editor the author rebuts an article by Dr. Esson (reference not given). The author claims that autism is a symptom, not a disease; a form of mental retardation with a very grim prognosis, not an emotional disorder that can be cured by psychotherapy.

The letter was brief with little elaboration of the points discussed.

Walker-Smith, J., & Andrews, J. Alpha-1 antitrypsin, autism, and coeliac disease. Lancet, 1972, 2, 883-884.

In this letter to the editor which is in reference to Dohan, F. C. (Lancet, 1970, 1, 897), the authors present material which might clarify the possible association between autism, alpha-1 antitrypsin, and coeliac disease. Of the 15 autistic children that the authors studied, 8 had an antitrypsin level that was below the normal limit (200 mg. per 100 ml.). None of these 8 had coeliac disease. As a result of these findings, it seems difficult to hypothesize a relationship among autism, antitrypsin level and coeliac disease.

Wing, L., & Wing, J. K. Multiple impairments in early childhood autism. Journal of Autism and Childhood Schizophrenia, 1971, 1, 256-266.

Language, perceptual, motor and behavioral abnormalities are compared in autistic, receptive aphasic, executive aphasic, mongoloid, partially deaf and blind children, and normal children. The difficulty of explaining early childhood autism as caused by any single abnormality is illustrated. The authors hypothesize that autistic children suffer from multiple impairments (which can vary in severity) affecting comprehension and use of speech, comprehension and use of gesture, auditory perception, visual perception, control of skilled movements, posture, autonomic function, and certain aspects of physical development. They then discuss briefly how this hypothesis might be confirmed or refuted.

Wolraich, M., Bzastek, B., New, R. L., & Gardner, L. I. Lack of chromosome aberrations in autism. The New England Journal of Medicine, 1970, 283, 1231.

In this letter to the editor the authors state that they have studied the chromosome complements of twenty-five patients, 5 to 30 years of age, who are categorized as autistic. All the subjects except one female had normal chromosome complements. The study lends no support to the hypothesis that autistic patients have chromosomal abnormalities.

The letter is brief and does not give additional information about the study.

AUTISM: TREATMENT

AUTISM: TREATMENT

PSYCHODYNAMIC APPROACHES

Childhood autism. The Canadian Medical Association Journal, 1968, 99(4), 187-189.

This article summarizes recent research regarding autism focusing on the hypothesis that bizarre behaviors diminish in stimulating and educational environments, while increasing in environments that are stimulus-deprived.

After describing present Canadian facilities for autistic children, the author outlines a milieu treatment approach. This approach utilizes a team that includes a psychiatrist, psychologists, a social worker, a nursery therapist, an occupational therapist and teachers, and emphasizes long-term daily routine which begins immediately after the child is identified as autistic.

Education for autistic children. Lancet, 1970, 11, 481.

This article gives a brief review of the situation of autistic children in England and describes the efforts of a member of the House of Lords to promote more funding and a better public education for such children. A debate in the House of Lords which centered around whose responsibility it was to educate autistic children -- the Department of Health or the Department of Education -- is detailed.

_____. Music for John: a mother learns to help. Parent's Voice, June, 1968, 18, 14.

Written by a mother of an autistic boy, this article traces her attempts to use his interest in music as a stepping stone both to help him further his talent and to facilitate the development of a close relationship between them. The boy began treatment with a music therapist who encouraged his talents and helped him constructively channel his interests. The mother was given a part in helping the boy with his music and through this contact she states that a warm relationship has grown between her and her son with music as the binding force.

Bartak, L., & Rutter, M. Special educational treatment of autistic children: a comparative study - II. Follow-up findings and implications for service. Journal of Child Psychology and Psychiatry, 1973, 14(4), 241-270.

This study deals with the statistical analysis of data concerning intelligence, language, social behavior and educational attainment of autistic children in three special educational settings. The determining

factor in education of autistic children appears to be I.Q. Education needs to be specific and active, utilizing one-to-one teaching techniques with the autistic child. According to the authors, little generalization of skills to other tasks or areas can be expected in educating autistic children.

Bogos, N. A multidisciplinary approach to a case of severe developmental arrest in chronic childhood schizophrenia. Devereux Schools Forum, 1972, 7, 1, 34-45.

An adolescent boy, diagnosed autistic by Kanner's guidelines, was exposed to a multidisciplinary therapeutic program after ten years in Devereux Schools without marked improvement. The new program stressed creating a greater awareness of his environment and a higher degree of personal reactivity to his surroundings rather than a more specific training program. Close interpersonal relationships were stressed as well as opportunities for the boy to experience physical stimulation (physical contact with staff and whirlpool baths were used). The steps of therapy and the type of experiences he was exposed to are detailed and discussed.

The author noted many positive changes, most centered around new accepting relationships with the people in his daily environment.

Bowness, J. The autistic child. Nursing Times, 1972, August 17, 1021-1025.

The article offers general information about autism, its symptoms, effects and etiological hypotheses, as well as a discussion of the autistic child's potential for learning.

A special unit and its treatment approach (Balderton Hospital in Notinghamshire, England) is described. The treatment stresses individual relationships with programming divided into three levels. The first level, reception, integrates new children using an intensive one-on-one staff-client relationship. The second, nursery, begins teaching behaviors needed in a classroom setting. The third level is educational with the child placed in a small classroom unit where speech and communication is provided with emphasis on the social environment.

A case history from the treatment facility is offered and the necessity of early treatment and education of the autistic child is emphasized in the author's conclusions.

Browning, M. Not see you Monday. Special Education, 1970, 59, 18-19.

James, when first seen by the author, his teacher, showed bizarre behavior, speech difficulties, overactivity, echolalia and apparent retardation. No accurate IQ was obtainable.

The subject initially attended class for 30 minutes a day progressing to two hours a day by end of the school year. As the time in the classroom grew, so did his ability to cope with the schoolroom situation.

From the description, repetition was the method primarily used to build James' awareness of his surroundings and to develop language. The implied cloase relationship which grew between the teacher and the child was probably also a very influential factor in his progress. The author admits a personal bias that threatens the objectivity of this report.

Bruce, A. G. A summer school for parents of autistic children. New Zealand Medical Journal, 1970, 72, 189-191.

An eight-day residential program for 11 three and one-half to 12-year-old autistic children and their families is described. The treatment program focusing on the autistic process was based on two priniciples: 1) intrusion, used to terminate behaviors subjects use to maintain social isolation and 2) the development of affective relationships between the child and his parents and sibs who are taught to ignore unacceptable behavior and reward acceptable behavior.

The on-going training program with parents and siblings was described generally and the treatment approach for the autistic subject was specifically detailed. The author concludes with a justification for intrusion therapy based on his subjectively observed improvements in the behaviors of these children.

Clancy, H. A group holiday: an innovation in the therapeutic management of the autistic child. The Slow Learning Child: The Australian Journal of the Education of Backward Children, 1970, 17, 149-162.

A program designed to meet the needs of the autistic child as well as those of his family is described including therapeutic activities, normal holiday activities and an instructional program for his parents. The purpose of this program was to bring together the families of autistic children to dispel feelings of isolation and hopelessness, to meet needs not handled appropriately in a clinical setting and to make available advice

and assistance concerning the child's needs and methods of behavior management.

According to the subjective evaluation of the author, these goals were met. It is stressed that this is not a formal treatment model and no formal analysis was attempted.

Clancy, H., & McBride, G. The autistic process and its treatment. Journal of Child Psychology and Psychiatry, 1969, 10(4), 233-244.

This article outlines a theoretical model of the autistic process as a part of a complex family system, followed by a treatment program derived from the model involving 53 autistic children and selected parents.

It is suggested that the autistic process is a developmental one beginning early in the child's life proceeding from the absence of a normal mother-child bond inhibiting a normal socializing process for the child. Treatment, therefore, must interrupt the autistic process in order to develop a normal process of primary and secondary socialization. The first step involves enhancing the mother-child relationship during feeding, then establishing a good, sound social bond between them.

The authors stress that this relationship-oriented treatment should interrupt the child's self-isolation efforts in order to succeed.

Clancy, H., & McBride, G. Therapy of childhood autism in the family. Current Psychiatric Therapies, 1972, 12, 1-8.

This discussion of a family-centered treatment approach focuses initially on the isolation syndrome as a function of the autistic process. This self-imposed social isolationism appears across a variety of familial and institutional settings.

A rationale for a treatment approach that incorporates the child into a normal socializing affectional system, stressing the importance of the family and utilizing behavior modification techniques, is presented. The authors note that this type of intensive treatment has been successful, resulting in some cases in day care placements.

No children were described (age, sex, characteristics, home environment) and no length of the treatment period was stated in this article.

Dagoni-Weinberg, E. From total isolation to social communication: treatment of a case of early infantile autism. Acta Paedopsychiatrica, (From MR Abstract, 1971, 8(533), 139.)

The author gives a detailed report of a 3-1/2-year-old autistic girl and her course of treatment. By the use of first child-centered, then home-mother-centered and finally family-centered therapy, the author managed to slowly develop language and response in the girl and change the attitudes of her rejecting family. The process took four years.

DesLauriers, A. What has happened to Gene. Devereux Schools Forum, 1972, 7, 1, 46-49.

In reference to an earlier article by Norman Bogos in Devereux Schools Forum (1972, 7, 1, 34-45) the author discusses the therapeutic route chosen for an autustic adolescent boy. The therapy sought to offer experiences he might need in order to begin normal developmental processes: a dynamic interaction between the child and his human environment. The needs of normal children are described and when these needs are not met, the author hypothesizes the type of child personality profile that might develop.

The "why" of the boy's condition, or others like him, is an unnecessary component of treatment. Viewing the child as what he is, in relation to problem areas, and devising the best method for dealing with the situation is the suggested approach.

Dunda, M. The one-to-one relationship in the treatment of autistic children. Acta Paedopsychiatrica, 1968, 35, 212-245. From Psychology Abstracts. Vol. 43, #4102.

Based on the assumption that autism may result from a shock during the early totally maternal dependent symbiotic stage of infancy, individual therapy is deemed necessary for emotional growth to occur. Subnormal girls were used to care for individual autistic children on a one-to-one basis. The results demonstrated improvement in both the girls and the children.

Implications for use of untrained personnel in the treatment of autistic children were discussed.

Durham, M. Pandora's box. The fantasies of an autistic-like child. Journal of the American Academy of Child Psychiatry, 1972, 11, 255-269.

The author, a clinical psychologist, describes her individual psychotherapeutic sessions with a severely disturbed "autistic-like" five-year-old boy. Although the therapy was interrupted after 17 months, the author felt that the subject responded favorably to the sessions and had improved his ability to form personal relationships. She raises two questions: 1) How can the fact that this autistic-like child was so quickly able to enter a relationship be explained? 2) What processes were at work during the treatment?

Goto, T. Social and educational problems during development of autistic children: An autistic child seen by us 16 years ago. (Japanese) Japanese Journal of Child Psychiatry, 1972, 13, 4, 226-230. (From Psych Abstracts, 1974, 52, #5550, p. 708.)

Based on a sixteen-year case study of an autistic boy and a review of treatment given long-term hospitalized autistic children, the author proposes basic directions for treating autistic children. Among the points discussed are: 1) avoided preoccupation with fixed concept of autism, 2) facilitation of child's development as first priority, 3) the necessary cooperative effort of therapists, school and family.

Halpern, W. I. The schooling of autistic children: preliminary findings. American Journal of Orthopsychiatry, 1970, 40(4), 665-671.

The author discusses a possible causal connection between a faulty capacity of speech or language acquisition and the presence of autism. He employed a group approach for language training of autistic children that emphasized overorganization of the school day in order to help the child overcome his inability to organize his external world and develop language organization. The classroom teachers monitor verbally everything being said or done to create a highly structured environment.

The author states that he has had a limited success with his program, yet a high percentage of his students are now attending public school special education classrooms.

Harper, J. Embracement and enticement: a therapeutic nursery group for autistic children. Slow Learning Child, 1973, 20, 3, 173-182.

The first three years of a nursery program for 20 autistic preschool children is described. Emphasis was placed on creating an accepting and supportive environment through which communication could be established and learning begun.

A female and male therapist, one a play therapist, one a psychologist, created a mother/father family structure unit for the children. Subjects are initially "embraced" into this family group and, once comfortable with their physical and emotional boundaries, are considered amenable to treatment procedures towards the goal of self-realization.

The structure of the program is detailed and the author concludes that, though limited, her program was successful.

Harper, J. Establishment of an educational programme for a group of autistic children. Slow Learning Child, 1969, 16(1), 3-14.

This article describes an educational program for autistic children in New South Wales. The program, conducted during regular school holiday periods to provide respite for parents has eight to nine autistic children and a staff of three to four. General and individual program goals including the creation of a supportive environment; organized physical, social and educational activities; and appropriate reinforcement were established.

The author details her daily school schedule and describes several activities (shape concept exercises, color and size, etc.). Problems encountered in the program are discussed and evaluated and progress is discussed in general terms.

Holter, F., Ruttenberg, B. Initial interventions in psychotherapeutic treatment of autistic children. Journal of Autism and Childhood Schizophrenia, 1971, 1, 206-214.

The authors offer clinical sketches of nine autistic children to illustrate the techniques they utilized to initiate a psychotherapeutic treatment. The four boys and five girls ranged in age from three to eight and one-half years old and were treated over periods of one and one-half years to seven years. The treatment approach stressed initiating interventions in accordance with a child's cues. For example, when a child rocked and whirled, the therapist imitated the actions.

After initiating therapist involvement with the subject and maintaining a high level of interaction, a dialogue was effectively established. This child/therapist dialogue resulted in an atmosphere where subject's fixation and defensive patterns could be identified and further intervention attempts formulated. The authors report limited success, with seven children improving to a limited degree, one regressing and one markedly improving.

Jerome, A. Scaling the fortress walls. Some ways of working with autistic children. Acta Paedopsychiatrica, 1973, 39, 263-270.

The author details her "relationship therapy" program which she uses with autistic children at the Step School in Chicago. Most prominent in her therapy is the underlying concept that typical behavioral programs with food reinforcers for "mechanical" gains allows the autistic child to remain withdrawn incorporating his task into his autism. She proposes that a free-accepting relationship with a teacher-therapist will allow the child more room for personal growth and learning.

Outlining the steps of her program, from establishing the initial relationship with the child, to the final problem of teaching the child to accept and deal with his emotions and feelings of self openly, the author concludes that a well-supervised teacher-therapist/student relationship allows for maximum growth while offering the child the opportunity to understand and integrate into the world around him.

Leighton, D. Casework with the parents of autistic children. British Journal of Psychiatric Social Work, 1969, 10(1), 17.

Autism, as an illness of early childhood, developing in a relatively unformed personality, is described in some detail to explain the author's experiences in working with the parents of autistic children at a residential treatment center for autistic children.

At the point of diagnosis, three problems must be explored with the parents: 1) expectations that parents have for their autistic child, 2) guilt feelings and allocation of blame, and 3) strategies to help parents to determine appropriate placements and/or exploration of possible training programs for the child.

Upon completion of the diagnostic work-up, the author emphasizes five points to be considered in the treatment process: 1) the need for practical help with the autistic child, 2) the emotional problems and pressures experienced by the family, 3) casework with an unresponsive parent, 4(casework with an over-protective parent, and 5) total family treatment.

Lush, D. Progress of a child with atypical development. Journal of Child Psychotherapy, 1968, 2(2), 64-73.

A three-year-old girl diagnosed as autistic but having verbal skills received analytic play-psychotherapy. She responded to the treatment by beginning to talk meaningfully, responding affectionately to people and by ceasing some stereotypic behavior.

Two sessions are described and discussed in detail followed by the author's theories concerning the child's recovery and ability to benefit from treatment.

Maier, W. Sensory deprivation therapy of an autistic boy. American Journal of Psychotherapy, 1970, 24(2), 228-245.

The experimental treatment of a five-year-old boy in a milieu of sensory deprivation within a hospital setting is presented. Described as psychotic with autistic defenses, the subject lived alone for 74 days in a room designed to reduce external stimuli and social interaction. After 50 days of minimal contact, the subject began increased physical contact with intervenors, the contacts became warmer, he began attempting to leave the room with intervenors, and whirling stereotypies were reduced. The deprivation setting had a calming effect allowing the child to seek individual, non-threatening contacts.

The author discussed theories on autistic defenses and psychotic functioning or receptors in an attempt to explain the effects of this deprivation intervention.

Maurer, A. Peek-a-boo: An entry into the world of the autistic child. Journal of Special Education, 1969, 3, 3, 309-312.

The significance of the peek-a-boo game and variations of it is discussed as related to the normal development of children. Children who do not experience these self-awareness experiences, awareness of others, and a feeling of power to make things be or not be may grow up withdrawn and out of touch with their environment.

The author presents a case study of a severely deprived and neglected child who was diagnosed autistic at the age of six. The therapist accidently began a peek-a-boo experience to which the child reacted positively. Over a period of time and after several peek-a-boo experiences which brought child and therapist closer, the boy began to speak spontaneously about himself, seemingly becoming more aware of the world around him.

Maurata, T., et al. A group therapy of autistic children: The result of four year Saturday class treatment at Kyusher University Psychiatric Hospital. (Japan) Kyushic Neuro-psychiatry, 1973, 19, 2, 170-177. (From Psych Abstracts, 1974, 52, #1520, p. 192.)

Fifteen two- to twelve-year-old autistic children participated in this therapy program staffed by volunteer psychologists, students, and mothers. Involving group and individual activities and stressing play therapy, this program's first year of operations is discussed by the author. Two successful case histories are described in detail.

Needleman, M., & Ward, A. J. The role of shared mastery in therapy with autistic and schizophrenic children. Psychotherapy: Theory, Research and Practice, 1972, 9, 51-53.

The authors present excerpts from several psychotherapy sessions to demonstrate a structural approach to therapeutic relationships. They assert that the therapist should help the child develop a system of increasingly more complex social behaviors. Initial mastery (reality based behavior) may take the form of appropriate direction of compulsive defenses. When the schizophrenic or autistic child attempts to retreat from the therapeutic experience into regressive forms of behavior, these retreats should be directed into areas of past mastery. By allowing the child to respond to simpler situations in an adaptive manner, the therapist avoids recurrence of bizarre behavior and reinforces "mastery sharing."

It is asserted that a therapeutic rhythm can be established through the intermixing of "mastery sharing" and therapeutic goals, leading to a greater range of adaptive behavior.

Richer J., & Nicoll, S. The physical environment of the mentally handicapped. IV: playroom for autistic children and its companion therapy project -- a synthesis of ideas from ethology, psychology, nursing and design. British Journal of Mental Subnormality, 1971, 17(33), 132-143.

The authors focus on two characteristics of autistic children: 1) wariness (flight motivated-escape or avoid social interaction); and 2) low tolerance for frustration. Considerable time was spent observing subjects in everyday living environments and a playroom to facilitate appropriate construction of a new playroom environment molded to the needs of the children. The playroom design objective was to increase social approaches and reduce frustration and arousal.

A detailed description of the experimental playroom is offered, complete with diagrams and explanations for each modification; i.e.-- to reduce frustration and arousal, "the room is subdivided into connected parts in order to cut down overstimulation.

After running a controlled experiment of autistic and non-autistic children in the old and new playroom, it was found that there was a marked decrease in stereotypies with a slight increase in staff and peer interactions.

The authors caution that this physical environment is not a cure but a precondition to successful therapy.

Rutter, M. Autism: concepts and consequences. Special Education, 1970, 59, 20-24.

The author clearly defines autism and looks at the aims and issues involved in education of autistic children. He considers the two most characteristic features of autism to be the difficulty in forming relationships with other people and the severe retardation in the development of language. After considering problem areas of abnormalities of language, abnormalities in social relationships, hyperactivity, anxiety, ritualistic behavior, mental subnormality, and the effect of an autistic child on the family, a strong foundation for support of education of autistic children is laid.

Schopler, E., Brehm, S., Kinsbourne, M., et al. Effect of treatment structure on development in autistic children. Archives of General Psychiatry, 1971, 24(5), 415-421.

The authors designed a program to investigate the optimum amount of structure needed in an autistic child's environment in order to maximize adjustment and development.

By alternating experimental conditions from structured to unstructured, it was found that the optimal level of structure was different for each child depending on his functioning level and perceptual and cognitive development. Children that were higher functioning could deal with a less organized environment then severely impaired children.

The authors have begun Developmental Therapy which sets up individual programs for families with autistic children. Development and functioning improved both at home and school.

Short-Rendle, J. Infantile autism in Australia. The Medical Journal of Australia, 1969, 245.

The author describes and discusses the need for a day center designed for autistic children. Although the author states that the center need not be large or elaborate, he recommends one or two large rooms with another small room for interviews and treatment. He further requires a "bath area" where the children can play with water and an adjoining garden for out-door activities. He suggests staffing the center with teachers, therapists and numerous aids maintaining the pupil-teacher ratio as close to one-to-one as possible.

The author postulates that if a child is treated at this center before the age of two, he should be able to progress from the autistic center to normal school at the approximate age of 7 or 8.

Siegel, E. Movement therapy with autistic children. Psychoanalytic Review, 1973, (Spr), 60(1), 141-149.

This article is written as a first person narrative of the author's experience with four autistic children in a schoolroom setting. Siegel states that her movement therapy is a pooling of the tools of psychoanalytic thinking and dance therapy. Through it the children learn to feel and experience their bodies pleasurably.

Her treatment approach involves invading the child's private physical space forcing an awareness of the therapist's existence. Rhythmic exercises, dances and body contact are used to help the children develop a sense of a separate self.

Stadeli, H. The problems of contact between mothers and their autistic children. (German) Acta Paedopsychiatrica, 1968, 35, 227-241. (MR Abstract, 1971, V48, 532, 139.)

The author discusses the generally aloof behavior of mothers of autistic children and states that through proper training it is possible to help the mother to be more positive and loving toward her child.

Tribbey, J., Louargand, E., Allen, A., & Olsen, J. Sacramento's day treatment center for autistic children. California Medicine, 1968, 108, 201-204.

After a brief summation of the different theories of etiology and methods of treatment for autism, the authors describe the program at the

Children's Center of Sacramento. Programming stresses flexibility, spontaneity and individuality in order to provide each child with the optimum treatment process. In conjunction with the academic program at the school there is a weekly parents group meeting to facilitate the exchange of views while gaining emotional support.

Ward, A. J. The use of structural therapy in the treatment of autistic children. Psychotherapy: Theory, Research and Practice, 1972, 9, 46-50.

Structural therapy is an intrusive technique designed to stimulate "body ego development" -- separation of self from nonself -- through confrontation between the autistic child and an external presences. The author views autism as resulting from a non-nurturent, unstimulating and unpatterned home environment that fails to precipitate normal ego development lending instead to the autistic's stereotypic behaviors as a substitute behavioral ego.

Guidelines are presented for the use of structural therapy to breakdown the behavioral ego and increase body awareness to a point at which conventional play therapy techniques can be used effectively.

Ward, T., & Hoddinott, B. The development of speech in an autistic child. Acta Paedopsychiatrica, 1968, 35, 199-215.

After a brief review of the literature concerning speech development, the authors describe the development of speech in a four-year-old mute male autistic child who was in an experimental treatment program for speech development. Detailed examples as to how the subject's speech was classified according to Piaget and the authors' system (which included a category for unintelligible speech and other non-communicative verbalizations) are provided.

The treatment program used is described in "A Study of Childhood Schizophrenia and Early Infantile Autism." Canadian Psychiatric Association Journal, 1965, 10, 377-386.

Wenar, C., Ruttenberg, B. A., Drotman, B. L., & Wolf, E. G. Changing autistic behavior: the effectiveness of three milieus. Archives of General Psychiatry, 1967, 17, 26-35.

The therapeutic effectiveness of: a custodial care oriented institution; a modern residential facility offering planned activities; and a psychoanalytically focused day-care center emphasizing emotional relationships between staff and clients, is evaluated in terms of producing behavioral change in autistic children over a year long period.

The third setting was most effective in achieving measurable improvement in relationships, task mastery and psychosexual development but none of the milieus produced significant change in communication or vocalization. The authors conclude that therapeutic change is slow in autistic children because progress in each area must proceed by fine steps and there is poor generalization from one area to another.

Wolf, E., & Ruttenberg, B. Communication therapy for the autistic child. Journal of Speech and Hearing Disorders, 1967, 32, 331-335.

The authors developed a program where autistic children at a pre-communication level were taught communication skills. After establishing a one-to-one relationship with the child through language awareness games, the authors focus on a task-oriented communications model where tasks are geared to the interest and skill level of the child. Children are assisted both with the meaning and mechanics of speech in a low-frustration task-oriented setting.

No statement of success rate is given.

AUTISM: TREATMENT

BEHAVIORAL APPROACHES

Benassi, V. Imitation and functional speech in autistic children: a reply to Hartung. Journal of Speech and Hearing Disorders, 1972, 37, 421-422.

The author considers critically a previously published article by Hartung, concerning the application of conditioning principles to non-verbal autistic children in imitation training. He challenges Hartung's work on eight specific points dealing mainly with his views on echolalia and imitation in autistic children. The author states that Hartung's work is incomplete and calls for a more complete investigation into the phenomena of imitation and echolalia.

Brawley, E. M., Harris, F. R., Allen, K. E., Fleming, R. S., & Peterson, R. F. Behavior modification of an autistic child. Behavioral Science, 1969, 14(2), 87-97.

This study explores operant learning techniques utilized with an institutionalized male diagnosed as autistic at two and one-half years of age.

After baseline information was obtained and appropriate and inappropriate behaviors defined, the model chose reinforcers (food and adult attention), for desirable behaviors which were withheld when inappropriate behaviors were displayed.

Focusing on the development of language, reading, physical movement and use of materials, an initial reinforcement period consisting of 21 sessions over a ten-week period was begun with the sessions gradually increased from 20 minutes to an hour. The reversal period was for four days and the second reinforcement period was for five sessions.

The study indicates that a systematic reinforcement of appropriate behaviors following a sequenced program can lead to marked improvement in an autistic child's verbal and academic behavior and abilities.

Brooks, B., Morrow, J. E., & Gray, W. F. Reduction of autistic gaze aversion by reinforcement of visual attention responses. Journal of Special Education, 1968, 2, 307-309.

The authors focused on the treatment of a specific autistic behavior, gaze aversion. Assuming that establishing eye contact with a 19-year-old deaf female subject would facilitate the training of other skills, a behavior modification approach was utilized. Visual attention responses were successfully controlled experimentally by using verbal and M and M reinforcers. No information was given as to the transfer of this behavior to non-experimental situations or whether other skills were learned as a result of learning eye contact.

Brown, R. A., & Pace, Z. Treatment of extreme negativism and autistic behavior in a six-year-old boy. Exceptional Children, 1969, 36, 115-122.

Johnny, a subject having many "autistic" symptoms (stereotyped speech of memorized sentences, blank expression, affectless) and extreme environmental negativistic reactions, entered a program designed to reduce negativism and increase attention to external stimuli through the use of behavior modification techniques.

Treatment was divided into four phases geared to increasing Johnny's compliance with demands and his acceptance of tokens and praise. Data was taken on four categories: a) relevant responses, b) tantrums, c) verbal negativism but no tantrums, and d) passive negativism and idleness.

The authors list the environmental conditions that reinforced Johnny's negative behavior and show how the changed contingencies led to improvement of the boy's condition.

Brown, R. A., Pace, Z. S., & Becker, W. C. Treatment of extreme negativism and autistic behavior in a six-year-old boy. Exceptional Children, 1969, 36(2), 115-122.

A three-part program, including a day school, a parents' group and individual treatment program, designed to aid emotionally disturbed children, is described. The article focuses particularly on the individual sessions with an autistic six-year-old boy, exhibiting affectless expression, stereotyped vocalizations and negative reactions to demands.

The sessions utilized behavior modification techniques (both positive and negative reinforcement) to encourage appropriate responses and resulted in increased positive verbal interaction across a variety of settings and improved academic achievement scores.

The authors caution that this subject, unlike many autistic children, had a repertoire of verbalizations, vital to the program's success. Later research revealed a possible organic cause for the autistic behaviors.

Browning, R. Treatment effects of a total behavior modification program with five autistic children. Behavior Research and Therapy, 1971, 9(4), 319-327.

Five autistic children, three female and two male, were studied for 35 months in an attempt to plan individual effective behavior modification programs which would result in each child returning home. Each child was

in a total program designed to extinguish inappropriate responses and train age- appropriate responses. The child was reinforced positively with food and social reinforcement, or punished by a high voltage low regulation shock and verbal scolding. Although all the children made some kind of progress, it was stated that their learning deficits limited continued progress.

The results indicate that in order to maintain a child's behavioral progress, one-to-one supervision in a highly structured environment is necessary. Because of this, the author felt that the goal should be adjustment to a residential placement rather than continued living at home.

Colligan, R. C., & Bellamy, C. M. Effects of a two-year treatment program for a young autistic child. Psychotherapy: Theory, Research, and Practice, 1968, 5, 214-219.

This article describes a treatment approach for a three-year-old female autistic subject designed to complement her regular nursery school classroom activities.

Relationship therapy and a behavior modification model (no aversive stimuli), was effective in developing a repertoire of adaptive behaviors. Long-term intensive application of selected reinforcers in a therapeutic nursery school milieu, resulted in observed improvement in the child's functioning and in progress towards the program goal of full participation.

Deatherage, R. M. Modifying appropriate and interfering behaviors in autistic children using a system of behavior modification, therapeutic teaching. Dissertation Abstracts International, 1972, 32(12), 6827.

This study attempted to determine if rates of appropriate behavior of three autistic children could be increased by using behavior modification techniques in a therapeutic setting. Rates of inappropriate behavior were also analyzed, and through the use of trend analysis, the two behavior curves illustrated that the rate of appropriate behavior could be predicted.

Dehn, J. K. An investigation of the development and maintenance of the negative behavior of autistic children. Dissertation Abstract International, 1970, 31, 1902-1903A.

This study demonstrated experimentally how negative behavior patterns of autistic children can be reduced and cooperative behavior increased. Various experimental conditions were used to measure types of social interaction which shape and maintain negative behaviors.

Results indicated that negative behaviors (response refusal or response reversal to verbal requests on a task subjects had previously performed) were absent when a task had been learned without error. There was low frequency on simple tasks on a variable ratio reinforcement schedule, increased frequency with abruptly changing reinforcement schedules, and the highest frequency occurred when negative attention was given to incorrect responses. Negative behavior was lowest when incorrect responses were ignored and reinforcement schedules were changed gradually.

Fischer, I., & Glanville, W. K. Programmed teaching of autistic children: scholastic progress over one year. Archives of General Psychiatry, 1970, 23, 90-94.

The authors describe the characteristics and academic progress of ten male and four female autistic children, ages 3.8 to 8.8 years. The hospital-school program, used behavior-shaping techniques (Lovaas), which consisted of three stages: 1) the pre-Frostig program; 2) the Sensory Motor Training of the Montessori Program; and 3) the Frostig Program of Perceptual Development. Pre- and post-assessment revealed variable within group progress, the majority (11) completing on average, ten percent of the program and no change in the Frostig Perceptual Quotient. Implications of the results for planning services for autistic children were discussed.

Foxx, R., & Azrin, N. The elimination of autistic self-stimulatory behavior by over-correction. Journal of Applied Behavior Analysis, 1973, 6(1), 1-14.

This study compares different methods used to eliminate the self-stimulatory behavior of retarded and autistic children. Over-correction is found to be the best immediate and long-range extinguisher of such behavior. Over-correction is defined as environmental correction of the effects of an inappropriate act and practicing of overly correct forms of relevant behavior. Over-correction works because it replaces a reinforcing self-directed activity with an equally reinforcing outward directed activity.

Foxx, R., & Azrin, N. Elimination of self-stimulatory behavior of autistic and retarded children by overcorrection. Proceedings of the Annual Convention of the American Psychological Association, 1972, 7(2), 761-762.

Two studies are described to illustrate the most effective means of eliminating self-stimulatory behavior (repetitive, stereotyped behavior serving no apparent function) in four subjects. In study one, two severely retarded girls with mouth related stereotypies were given four treatment procedures: overcorrection, free reinforcement for non-mouthing and contingent physical punishment. Overcorrection was the most effective procedure and free reinforcement and reinforcement for non-mouthing were least effective.

In study two, the same procedures were applied to two more children, one autistic and one severely retarded, with hand-clapping and head-weaving stereotypies. Findings were the same as in study one. In terms of immediacy, completeness and permanence of reduction, the over-correction method was shown more effective.

Geller, J. The development of behavior therapy with autistic children: a review. Journal of Chronic Diseases, 1972, 25, 21-31.

In contrast to the other treatment procedures that have been used with autistic children (psychotherapy, "regressive therapy," LSD therapy, vitamin therapy, "relationship therapy," or electroconvulsive therapy), the author describes the development and application of behavior therapy with this population. The historical and theoretical background of operant conditioning as well as its use with parents as therapists is provided.

In answer to the criticisms against operant techniques (superficiality, temporary improvement, symptom oriented, etc.), the author states that these are caused by a lack of understanding behavior therapy and an unfamiliarity with its results.

Goldstein, S., & Lanyon, R. Parent-clinicians in the language training of an autistic child. Journal of Speech and Hearing Disorders, 1971, 36(4), 552-560.

The authors investigated the possibility of training parents to use modeling-reinforcement procedures which involves parents modeling the therapist, to improve their child's language skills. Over a 30-week period one-hundred-twenty-five 45-minute sessions were conducted by one set of parents and/or the authors. The guidelines and rationale for the sessions and the method of supervision are described in detail.

It was found that the 10-year-old subject's articulation improved, his wants were expressed in sentences, and he initiated conversations in school. The authors state that such treatment can be beneficial if the parents are highly motivated and can learn the modeling reinforcement procedures.

Graziano, A. M. A group treatment approach to multiple problem behaviors of autistic children. Exceptional Children, 1970, 36, 765-770.

The author attempted to establish effective behavioral approaches to organized, small group treatment for severely psychotic children. Subjects were four autistic children, ages five to nine, with serious behavior disorders. Through the use of primary and then secondary reinforcers, he shaped acceptable and cooperative behaviors, increasing responsiveness as the group behavior improved and social and vicarious reinforcement became strong positive factors.

The author details his program and stresses the importance of parental training and involvement in the techniques used in school so that behavioral generalization can take place. He postulates that a severely disturbed psychotic or autistic child can be significantly improved in only two or three years.

Hamblin, R., Buckholdt, D., Bushell, D., Ellis, D., & Ferritor, D. Changing the game from "get the teacher" to "learn." Transaction Magazine, 1969, 6(3), 20-31.

Token reinforcement exchange systems were instituted among aggressive, young, and autistic children in four experimental classrooms. Over an 18 month period of reinforcing "good" behavior with primary reinforcers and punitively discouraging "bad" behavior, the authors found that their method lessened aggressive behavior and allowed the children to improve their reading skills. Shy, withdrawn children began to speak more easily and autistic children developed some functional speech, decreased their bizarre behaviors, and improved their social relationships.

Harmatz, M. D., & Rasmussen, W. A. A behavior modification approach to head banging. Mental Hygiene, 1969, 53, 590-593.

The authors demonstrate, through a case study, the use of a behavior modification paradigm in the extinction of head banging behavior. The technique utilized in this study posits social reinforcement as causing the observed high frequency of head banging and utilizes extinction and a shift of social reinforcement to other behavior as the treatment. The case study cited claims elimination of head banging in five weeks.

Hartung, J. Review of procedures to increase verbal imitation skills and functional speech in autistic children. Journal of Speech and Hearing Disorders, 1970, 35, 203-217.

The author attempts to document theories and substantiate treatment methods used in verbal conditioning of non-speaking autistic children. By culling significant research the author offers a step-by-step procedure for verbal conditioning. Each component of the conditioning procedure is organized into manageable and easily taught behavioral units.

Hingtgen, J. N., Coulter, S. K., & Churchill, D. W. Intensive reinforcement of imitative behavior in mute autistic children. Archives of General Psychiatry, 1967, 17, 36-43.

Two mute autistic children with no significant improvement following various types of traditionally oriented therapy, were individually isolated for twenty-one days. During six hours of daily training sessions, two to six adults reinforced three types of responses: 1) general use of body; 2) use of objects; 3) vocalizations. After the twenty-first-day period, over two hundred responses of the first two types and an imitative vocabulary of eighteen words were established. There was evidence that imitation was generalizing to new responses. Five months following the initial training, the children had progressed beyond imitative responding, and were printing letters, using auditory cues, and using a scissors.

The results suggest that a short-term intensive imitative training period might be effective in establishing a large number of behaviors which can be used by training personnel as the foundation for working toward a broader and more spontaneous behavioral repertoire in autistic children.

Husted, J., Hall, P., & Agin, B. The effectiveness of time-out in reducing maladaptive behavior of autistic and retarded children. Journal of Psychiatry, 1971, 79, 189-196.

The stated problem is that profoundly retarded and autistic children rarely generalize new behaviors learned in one setting to another setting. This study tried to determine if these children can learn more appropriate behavioral patterns through a time-out procedure and if some technique of generalization can be determined.

The authors found that teaching of academic tasks was possible in a time-out paradigm but generalization or reinforcement schedule reduction could not be achieved. They suggest that time-out not be used as an all inclusive form of therapy but they stress its value as a part of a more comprehensive program of operant conditioning.

Karp, N. E. Two experimental teaching methodologies for autistic children. Dissertation Abstracts International, 1973, 33, 6177.

This study compares teaching methods based on behavior modification principles with those based on psychodynamic principles. Forty autistic children were randomly assigned to classes using one of the techniques. After nine months, the subjects in the psychodynamic group were using productive speech while the behavior modification group members were completing tasks that included dressing and undressing themselves. The study concluded by suggesting that different teaching methods, teacher consistency, and specific curriculm items be used in special education programs for autistic children.

Koegel, R. L., & Covert, A. The relationship of self-stimulation to learning in autistic children. Journal of Applied Behavior Analysis, 1972, 5, 381-387.

Data relating correct responses on a discrimination learning task to self-stimulation in three autistic children is presented. The experimental task attempted to elicit a bar-pressing response to a visual and auditory stimulus and to a lack of the response during a non-stimulus interval with correct bar-pressing response rewarded with candy.

The results indicated that: 1) subjects did not acquire the discrimination while self-stimulating; 2) suppression of self-stimulation increased correct responding and acquisition of the discrimination; and 3) successful discrimination learning was always associated with reduced self-stimulation.

The author suggests that selective attending to self-stimulation by autistics interferes with acquisition of new behaviors and external suppression of self-stimulation is necessary in learning situations.

Kozloff, M. Social and behavioral change in families of autistic children. Dissertation Abstracts International, 1970, 30(12-A), 5543.

This research is based upon an exchange theory of social learning involving the development and testing of a training program with five families having an autistic child. The author hypothesized that training the parents will produce changes in the system of exchanges at home and there will be changes in the child's behavior concomitant with parental changes. The parents' and children's behaviors were monitored and graphed as parent training occurred.

Results were positive with parents successfully learning the various techniques for improving their interactions with the child and coping better with bizarre-disruptive behavior. Follow-up studies indicated continued success in all the areas of concern.

This program could be used with autistic children as well as those having milder behavioral disturbances.

Laurens, P., & Dorman, L. Functional factors in the etiology and treatment of a case of infantile autism. Alabama Journal of Medical Science, 1972, 9, 428-433.

The authors present the case history and treatment procedure used with a four-and-one-half-year-old male, diagnosed as displaying Early Infantile Autism (EIA). The treatment combined operant and contiguity learning approaches to 1) increase verbal and non-verbal utterances, 2) make verbal production responsive to modeling and reinforcement by mother and later other family members, and 3) train responsivity to verbal stimuli in both therapy sessions and at home.

The authors contend that the success of their treatment procedure indicates that functional factors -- inappropriate reinforcement and parental modeling -- create a major portion of the autistic condition. The logic of this argument does not invalidate the possible usefulness of their treatment procedure.

Lovaas, O. I., Litownik, A., & Mann, R. Response latencies to auditory stimuli in autistic children engaged in self-stimulatory behavior. Behavior Research and Therapy, 1971, 9, 39-49.

Mute and echolalic autistics, and normals were studied under self-stimulation versus no self-stimulation conditions. Groups were trained to approach a candy dispenser at a tone. The response latencies (interval between tone and response) of the mute autistics decreased as subjects received increased training responding to auditory stimuli. For mute autistics, presence of self-stimulatory behavior was associated with increased response latencies. Amount of self-stimulatory behavior varied with magnitude of reinforcement for other behavior. Although the data is weak, it is supported by Risley's (1968) and the authors' observations to the effect that elimination of self-stimulatory behavior is followed by increased response to training stimuli.

Lovaas, O. I., & Schriebman, L. Stimulus overselectivity of autistic children in a two stimulus stiuation. Behavior Research and Therapy, 1971, 9(4), 305-310.

This study discusses stimulus overselectivity (a tendency to focus attention only on one variable within any multi-variable complex stimuli presentation) and its implications for an autistic child.

Auditory and visual stimuli were presented to subjects and though there was no evidence of any sense modality impairment, the autistic child consistently responded to only one component of a complex cue. It was concluded that stimulus overselectivity may retard complex behavior, meaningful speech, and recognition and understanding of symbolic reward as contiguous presentation of stimuli is the basis of such learning.

Lovaas, O. I., Schreibman, L., Koegel, R., & Rehm, R. Selective responding by autistic children to multiple sensory input. Journal of Abnormal Psychology, 1971, 77(3), 211-222.

Autistic, retarded, and normal children were reinforced for responding to a complex stimulus which involved the simultaneous presentation of auditory, visual and tactile cues. When the discrimination was established, the various elements were presented separately to assess which aspects controlled the child's behavior.

It was found: a) autistic children responded to only one of the cues; the normal children to all three; and the retarded children to two; b) non-functional cues could be established as functional when separately trained. The data failed to support notions that any one sense modality is impaired in autistic children. However, where presented with a stimulus complex, the attention of the autistic children tends to be over-selective.

Failure to respond to more than one stimuli might be an important factor in the development of autism.

Marshall, N. R., & Hegrenes, J. R. Programmed communication therapy for autistic mentally retarded children. Journal of Speech and Hearing Disorders, 1970, 35(1), 70-83.

This study describes the goals and procedures of a communication therapy program using operant principles to modify autistic behavior. Experimental techniques are explained in detail as the clinicians work to develop looking and imitative behavior, verbal responses, and conceptual formation with four autistic boys. Two of the four boys developed sufficient language to be able to participate in a special education class.

Martin, G., England, G., Kaprowy, E., Kilgour, K., & Pilek, V. Operant conditioning of kindergarten class behavior in autistic children. Behavior Research and Therapy, 1968, 6, 281-294.

This study gives a detailed experimental account of operant conditioning used with ten autistic children who develop sufficient skills to function attentively and verbally in a classroom setting. The experiment began in a barren room where tantrum behavior was extinguished. Within three months the room had developed into a simulated classroom where learning tasks were taught. The study was based on previous works of Lovaas with the exceptional that undesirable behaviors were extinguished by ignoring them and not by attending to them as Lovaas had done.

Martin, G. L., & Pear, J. J. Short-term participation by 130 undergraduates as operant conditioners in an ongoing project with autistic children. Psychological Record, 1970, 20(3), 327-336.

This study within a study involves token-trained autistic children participating in an ongoing experiment conducted by undergraduate students who were being trained in operant conditioning techniques to teach classroom skills. Operant conditioning techniques enabled the ten autistic children to function in a kindergarten class under the supervision of one teacher. It was found that the undergraduate students performed their job more effectively when their instructions were coupled with reinforcement for correct use of operant techniques with the subject children.

McConnell, O. C. Control of eye contact in an autistic child. Journal of Child Psychology and Psychiatry, 1967, 8, (3 and 4), 249-255.

This study discusses the use of behavior modification techniques in overcoming the visual avoidance of a five and one-half year-old autistic child. The research design included baseline rates, conditioning, extinction and reconditioning sessions.

Eye-contact was chained to the child's verbal responses and the number of eye-contacts achieved in this phase of the experiment was high. Other behavioral changes were observed as the eye-contact reinforcement began--most notably the child laughed, clapped his hands, sat in E's lap. In early sessions, S reacted aggressively toward the E, but in later sessions was affectionate, willing to cooperate, even occasionally turning to E for help.

The author states further research on past reinforcement patterns and associations is needed to clarify the diverse emotional reactions, ranging from affection to aggression, which the child exhibited.

Means, J., & Merrens, M. Interpersonal training for an autistic child, Perceptual and Motor Skills, 1969, 28, 972-974.

A three and one-half-year-old boy exhibiting some characteristics attributed to autism (insistence on sameness, withdrawal from his environment, and self-stimulatory behaviors) was experimentally treated. Treatment sessions attempted to foster and reinforce socialization approach behaviors in a one-on-one clinical setting. The therapist provided stimuli (noise, bouncing ball, etc) to elicit an approach and begin interaction. The 30-45 minute sessions were kept as simple and controlled as possible to avoid stimulus complexity.

After 14 sessions over two months, a reduction in self-stimulatory activities and a rise in interactional socialized behaviors was noted, concomitant with the subjects progression from parallel to cooperative play.

Moorehead, C. Curing by slapping and shouting. Times Educational Supplement, September 18, 1970, 2887, 6.

After three months of intensive treatment a 12-year-old autistic girl was taught to communicate her needs through speech. Operant conditioning techniques (Lovaas), which reward positive behavior, are viewed as the most beneficial mode of training and teaching autistic children.

The author visualizes autism being biologically determined but believes that operant conditioning can improve the child's behavior.

Morrison, D., Miller, D., & Mejia, B. Effects of adult verbal requests on the behavior of autistic children. American Journal of Mental Deficiency, 1971, 75(4), 510-518.

The authors investigated the effects of adult verbal requests on the performances of two autistic, mentally retarded boys, eight and ten years of age. The study was conducted with the use of imitation, verbal cues, and social reinforcement.

In a brief discussion of the results, it is suggested that the subjects' failure to discriminate was not caused by an inability to understand the request, but, rather by the subjects' conflicts in complying with adult request.

Further investigation is in progress to study the motivational factors which affect performance and the situational factors which influence sense perception.

Morrison, D., Mejia, B., & Miller, D. Staff conflicts in the use of operant techniques with autistic children. American Journal of Orthopsychiatry, 1968, 38, 647-652.

This article discusses interpersonal staff problems that arose during an experimental operant conditioning program with an autistic six-year-old male in a residential setting. The experimental design featured appropriate modeling behavior with food used as a reinforcer.

The experiment was viewed in two ways by various hospital personnel working with the child. First, as an inappropriate attempt to use impersonal scientific methods, and second, as a hopefully successful method of treating a child who had not significantly responded to any previous treatment. Feedback from staff about experimental success was directly related to their feelings about the control of food intake as an appropriate behavioral technique. The amount of reinforcement (food) given to the child was often subjective according to the staff member's perception of the child's ability to complete the modeling behavior.

A positive outcome was the opportunity for staff members to observe that operant techniques can result in favorable changes.

Murray, M. The treatment of autism: a human protest. Journal of Humanistic Psychology, 1974, 14, 2, 57-59.

This brief report relates an incident that occurred when a nine-year-old autistic boy, asked persistently by his tutor in a behavioral speech program if he wanted a cookie, finally answered by replying, "No, and I'm getting tired of this shit."

The author gives reasons why the boy's response should not be considered delayed echolalia and discusses the meaningfulness of the child's statement. The statement was interpreted as a human protest against the mechanistic behavioral environment around him. This article is followed by a "rejoinder" comment by Schreibman and Lovaas, p. 61-62.

Nelson, R. O., & Evans, I. M. The combination of learning principles and speech therapy techniques in the treatment of non-communicating children. Journal of Child Psychology and Psychiatry, 1968, 9(2), 111-124.

The article presents a speech training program using speech therapy techniques in an operant model to increase the likelihood of the subjects producing specific speech sounds. Four non-communicating children, two autistic, one educationally subnormal, and one phaisic, received chocolate and other foods as reinforcers for producing basic words and sounds.

Three of the children, including the autistic, showed measurable improvement. The authors suggest that the use of speech therapy techniques and operant conditioning should be more closely allied to develop speech patterns in non-communicating children.

Nordquist, V., & Wahler, R. Naturalistic treatment of an autistic child. Journal of Applied Behavior Analysis, 1973, 6(1), 79-87.

This study measured the value of using operant conditioning methods in a natural home setting rather than in laboratories or a school. Parents were trained in reinforcement therapy and continuous support and assistance was offered by the trainer. A detailed account of one family's efforts using reinforcement techniques with their child is presented.

Generally, parents were found to be successful in modifying a wide variety of their child's autistic behaviors. The authors suggest that home-based treatment programs can be very effective if the parents are willing and able to learn basic behavior modification techniques.

Sailor, W., & Taman, T. Stimulus factors in the training of prepositional usage in three autistic children. Journal of Applied Behavior Analysis, 1972, 5, 183-190.

The authors present a training program for the use of the prepositions "on" and "in" with minimally verbal autistic children. Correct responses were reinforced with small amounts of food and verbal praise. A series of training sessions were run utilizing ambiguous (same stimuli for both prepositions) and non-ambiguous conditions (different stimuli). The results indicated that training with different stimuli for each preposition lead to more rapid learning. A series of training sessions, alternating the ambiguous and non-ambiguous conditions, suggested that initial training with the non-ambiguous condition enhances later performance. The interpretation of results is confounded by the small sample size.

Saposnek, D., Watson, L., Jr. The elimination of the self-destructive behavior of a psychotic child: a case study. Behavior Therapy, 1974, 5, 79-89.

Because of the controversy surrounding the use of electric shock to control self-destructive behaviors in severely disturbed children, the authors explore an alternative approach, rage-reduction therapy and use it with a ten-year-old autistic/retarded boy who had been institutionalized in restraints for one year.

The experimental procedure involved the experimenter physically restraining the subject at the onset of self-destructive behavior (head-slapping at a rapid rate with both hands) and then offering his own hands for the child to hit thus focusing the child's anger on external objects and preventing self-injury. After the subject's anger was reduced, it became possible to teach play and self-help skills heretofore not possible because of the mechanical restraints previously used.

The authors state that their method was not physically dangerous to the child and that the self-destructive behavior was markedly reduced and essentially eliminated in six months.

Schreibman, L. Within-stimulus versus extra-stimulus prompting procedures in discriminations with autistic children. Dissertation Abstracts International, 1973, 33(7-8), 3360.

Noting that the typical "prompt" used in teaching autistic children various tasks might actually function as a hindrance, the author points to the characteristic autistic tendency to respond overselectively to the components of a given stimulus rather than reacting to the stimulus as a whole. The "prompt," as it is usually used, would seem likely to confuse the child.

Subjects were exposed to two types of prompts-one present within the task discrimination, which was an exaggerated part of the stimulus that would lead the child to success and an extraneous prompt, pointing to the correct answer or ringing a buzzer when the correct stimulus was presented.

All subjects failed to learn anything without a prompt or when the extra-stimulus prompt was used alone. However, they usually did learn a new task when the within-stimulus prompt was employed.

According to the author, these findings should have far-reaching effects in the field of educating autistic children as the extra-stimulus prompt is a widely used teaching technique in any behavioral program.

Schreibman, L., & Lovaas, O. Rejoinder to Murray's article. Journal of Humanistic Psychology, 1974, 14, 2, 61-63.

The authors answer a brief article in the same issue by Murray (pages 57-59) concerning the dehumanized aspects of behavioral programs for dealing with autistic children. The previous article is strongly criticized for several reasons: a misrepresentation of behavior modification techniques; a possible faulty diagnosis of the child in question; and a lack of understanding of the finer points of delayed echolalia and of autism in general.

Shennan, V. Dr. Kassoral Speaks... Parent's Voice, Dec. 1970, 20, 10-11.

Relating the substance of a conference in London occurring among the parents of a 12-year-old autistic girl, the subject's psychologist and other prominent psychologists knowledgeable in the area of operant conditioning, this simply written article discusses the paradigms of operant conditioning and its usefulness with autistic children.

Basic principles of operant conditioning are discussed and questions concerning the problems of negative and positive reinforcement are dealt with by the panel. It is suggested that the delineated methods can help alter the autistic child's behavior to make her amenable in everyday living conditions and facilitate the acquisition of necessary communication skills.

Silver, E. B. Operant conditioning of speech sounds in an autistic child. South African Journal of Psychology, 1970, 1, 3-12.

A six and one-half-year old, non-verbal autistic child, manifesting severe self-destructive behavior, was trained by operant conditioning to produce speech sounds. Mild deprivation of reinforcers (sweets) was sufficient to motivate the child for the training sessions. After 139 daily sessions, with initial use of tactile cues, the child could imitate eleven sounds and twenty words. Four words were used correctly in the home environment.

During a five-week course of phenobarbitone, the child lost all speech except for three sounds and one word, despite continuation of training. Contingent reinforcement was shown, during further sessions, to be the essential factor in the learning.

Smith, J. Reinforcement as a technique in teaching autistic children. Deficience Mentale/Mental Retardation, 1970, 19(1), 19-23.

The author, a teacher at a school serving autistic children, uses operant conditioning methods based on a film about the works of Ivar Lovaas.

Reinforcement therapy was used with six autistic children for a period of 11 months. Treatment was divided into three phases: 1) attempting to gain rapport, 2) increasing verbalizations and spacial and physical concepts, and 3) combining the simple behaviors of (1) and (2) into more complex patterns.

The author was enthused about her results and the potential for progress in reinforcement therapy.

Stark, J., Giddan, J., & Meisel, J. Increasing verbal behavior in an autistic child. Journal of Speech and Hearing Disorders, 1968, 33, 42-48.

Using behavior modification techniques on a five-year-old autistic boy, the authors in this study report on techniques they found valuable in four areas of treatment: nonvocal imitation, vocal imitation, verbal labeling and verbal discrimination.

Nonvocal imitation began with gross body movements successfully copied, reinforced, and continued until more discrete movements of the tongue and lips could be imitated. In phase two, the authors describe how and why certain sounds were picked over others to be taught and how the verbal hierarchy was established. Labeling and discrimination tasks were even more intricate and dealt with his total environment.

Sulzbacher, S. I., & Costello, J. M. A behavioral strategy for language training of a child with autistic behaviors. Journal of Speech and Hearing Disorders, 1970, 35, 256-276.

This article outlines behavioral methods used with a 6-1/2-year-old boy with autistic behaviors. The program was designed to teach language skills while eliminating behaviors that interferred with the subject's use of those skills.

The program, involving both his mother and teachers, demonstrated success. The child, now 10-years-old, is achieving at grade level in all his school subjects and will attend regular class when he enters junior high.

The article offers a considerable amount of specific information about the behavioral strategies used including some which can be easily implemented in the home environment.

Tramantana, J., & Stimbert, V. E. Some techniques of behavior modification with an autistic child. Psychological Reports, 1970, 27, 498.

This description of behavior modification techniques used to socialize an autistic seven-year-old boy involved speech training directed toward establishing an extensive repertoire of questions and answers by fading imitative prompts. Training occurred in a variety of environmental situations and written records of his current repertoire were given to his family and others involved with the subject to aid repertoire generalization. All spontaneous verbalizations were rewarded to increase this automatic response category.

During the fifty twice-weekly training sessions, marked changes in social behavior took place -- eye contact improved and room-roaming decreased. In addition, time-out from social attention ineffective at the beginning of the training became useful in controlling disruptive behaviors.

Umezu, K., et al. The treatment of autistic children with behavior therapy. Japanese Journal of Child Psychiatry, 1972, 13, 73-88 (abstracted from Child Development Abstract and Bibliography, Vol. 47, 1973, 665).

The authors describe a four-year program designed to judge the effectiveness of behavior therapy with autistic children and their mothers. A variety of learning problems, reinforcers, and evaluative processes are discussed.

Urry, N. Behavior modification with an autistic child. Nursing Times, 1970, April 9, 456-458.

Beginning with a brief overview of autism and a discussion of possible etiology, this article discusses the Creak Scale as a diagnostic tool and gives a brief definition and explanation of behavior modification. A case history is presented to demonstrate the practical usage of behavioral techniques with problems common to autistics, including head-banging, poor eye contact and inadequate play skills. The article is short and superficial, aimed at the general nursing population.

Walker, C. E., Lovaas, O. I., Metz, J. R., Wolpe, J., & Wolpin, M. Behavior theory and therapy. California Mental Health Research Symposium, 1968, No. 2, 1-50.

This monograph consists of four papers which were presented separately by the authors at the Camarillo State Hospital on November 3, 1966. Lovaas' paper explains the treatment approach to both autistic and schizophrenic children by utilizing behavior modification with a section dealing with the rationale for and use of shock to diminish a child's self-destructive behavior. Metz's paper describes the use of conditioning techniques with a group of hospitalized emotionally disturbed children (4-9 years) focusing on the use of a token system to teach social and self-help skills followed by small group cooperative play. The last two papers discuss differing methods of reducing fear. Wolpe discusses the use of reciprocal inhibition (using counter conditioning-assertive responses, relaxation responses, and sexual responses) to reduce anxiety which thereby reduces fear while Wolpin describes the use of producing anxiety to reduce a person's fear. Both authors cite individual cases which were successfully treated through the different methods.

AUTISM: TREATMENT

CHEMOTHERAPY

Bonisch, E. Experiences with pyrithioxin treatment of brain-damaged children with autistic syndrome. Praxis Kinderpsychologie und Kinderpsychiatrie, 1968, 17, 308-316. (From Psych Abstract, vol. 43, #8418.)

Sixteen brain-damaged children with autistic syndrome were treated with pyrithioxin (a derivative of priridoxine, Vitamin B6). Twelve appeared to become more affectionate and interested while five showed speech development. No additional information concerning experimental methodology or more fully explaining results is available in the abstract.

Bruce, A. G. Lucidril for autism. The New Zealand Medical Journal, 1971, 73, 173.

The effects of the drug, Lucidril, on a male patient, age six, diagnosed as having infantile autism are described. On a dosage of 300 to 600 mg. daily his "intention" span greatly improved and his hyperactivity decreased. When the drug was withdrawn there was noticeable deterioration of behavior within 48 hours. At age 13, the child was slowly withdrawn from Lucidril resulting in increased anxiety and hyperactivity but maintenance of developmental improvements. The author suggests that Lucidril might be used instead of amphetamines to help autistic children.

Lipman, L. Management of the autistic child. South African Medical Journal, 1970, 44, 1028-1032.

Presenting statistics on autism and the perceptual and cognitive problems of autistic children, the author rejects the hypothesis that parents can cause autism and leans to a physiological, biochemical approach. Reflecting on the treatment of autistic children, the article summarizes the techniques of behavior therapy and describes different programs at four special schools.

Mogar, R. E., & Aldrich, R. W. The use of psychedelic agents with autistic schizophrenic children. Psychedelic Review, 1969, 10, 5.

Seven independent studies are reviewed involving a total of 91 autistic schizophrenic children who had been given psychedelic drugs for therapeutic and/or experimental purposes. The majority of the children involved were between the ages of six and ten, and had not responded to other forms of treatment.

The most consistent effects of psychedelic therapy reported in these studies included: (a) improved speech behavior in otherwise mute patients; (b) greater emotional responsiveness to other children and adults; (c) increased positive mood, including frequent laughter; and (d) decrease in complusive ritualistic behavior.

The authors conclude that the collective findings argue strongly for more extensive application of psychedelic drugs in the treatment of autistic children.

AUTISM: TREATMENT

VARIED APPROACHES

_____ The lost children. Roche Medical Image and Commentary, 1970, 12, 8, 14-17.

This article reports Dr. T. Campbell and Dr. Mary Stewart Goodwin's work with handicapped children with emphasis on those having autism and aphasia, treated in their Baltimore pediatrics practice. Their initial work with 65 autistic children, ages three to sixteen and a "talking typewriter," ERE (Edison Responsive Environment), a computerized machine programmed to a tape recorder and used for diagnostic purposes, is outlined.

Case histories revealed 48 mothers had complications in pregnancy, and a high percentage of organic problems were found in the children with two-thirds of the total group exhibiting positive neurological damage. Medical treatment led to marked improvement of their condition.

The Goodwins call for concentrated medical effort in this area and warn against censuring parents of autistic children.

Colby, K. Computer-aided language development in non-speaking children. Archives of General Psychiatry, 1968, 19, 641-651.

Because of disagreement on definitions of autism and other severe childhood distrubances, this author chose a descriptive definition of "non-speaking" child (one who does not use speech for social communication), for subjects used in this study. Responding to literature that indicates that absence of speech is correlated with poor prognosis the author attempted to teach functional language to these non-verbal children to improve long-term prognosis. A computer designed to take advantage of this population's fascination for machines was utilized experimentally.

The games which could be played on the computer to aid language development were described and case histories were given for some of the ten 10-12-year-old children treated. Eight of the children improved relative to their own starting point and two did not. The author found these results encouraging and proposed further study of the methodological problems, theory, and technology of computer-based language development techniques.

DeVilliers, J., & Naughton, J. Teaching a symbol language to autistic children. Journal of Consulting and Clinical Psychology, 1974, 42, 1, 111-117.

This study attempted to advance language in two autistic children through the use of particles (word written on magnetized strips) in displays (sentences on a magnetized board). "Joe give _____ Adam," is a typical example, missing a particle which the child needs to fill in correctly. The method enveloped nine paradigms including food words, discriminations, questions, commands, etc., and is described in detail.

The program worked successfully over a 40 session experimental period with the children acquiring meaningful communication skills for the first time. The authors see this program as a fading procedure that allows for errorless learning and can lead to a gradual transfer to the modes of speech or writing.

Dewey, M. Recreation and exercise as therapy for autistic children: the historical perspective. Journal of Health, Physical Education and Recreation, 1973, 44, 87-88.

The article reviews the past uses of recreation with autistic children as a means of therapeutic contact. The historical research outlined by the author dates back to the middle 1800's. Uses of music, circular games and repetitive tasks are explored.

The author calls for more research in this field in order to analyze further what possible behavioral benefits and therapeutic gains could be added to treatment of autistic children by the use of recreational therapy.

Fassler, J., & Bryant, N. D. Distrubed children under reduced auditory input: a pilot study. Exceptional Children, 1971, 38(3), 197-204.

The authors investigated the use of ear protectors to reduce auditory input in 20 seriously disturbed, communication impaired, "autistic" children who ranged in age from 5 to 12. Subjects were rated by five task performances and by teacher ratings under placebo conditions.

The authors state that although it is possible that the increases in classroom attention, task attention, and task performance were due to the lessening of sounds, the changes may also be due to other factors, i.e., the uniqueness of the ear protectors.

Fineman, K. R. Shaping and increasing verbalizations in an autistic child in response to visual color stimulation. Perceptual and Motor Skills, 1968, 27, 1071-1074.

The study's hypothesis was that systematic visual-color consequences contingent on verbalizations would be effective in shaping the verbalizations of a 6-year-old who had autistic-like behaviors. The results indicated that the use of a lighted, colorful screen as a consequence of verbalization in a free operant situation did increase verbalization. However, in a prompt-response situation, food was more effective.

It was suggested that further research was needed to understand this effect as well as to analyze the components of visual-color stimulation.

Fineman, K. R. Visual color reinforcement in establishment of speech by an autistic child. Perceptual and Motor Skills, 1968, 26(3) part 1, 761-762.

This study attempts to measure the effectiveness of visual consequences as a reinforcer in teaching speech to a non-verbal autistic child. After

establishing a baseline for the child's verbalization, similar in content to a baby's babbling, color arrays on a light panel and "color organ" were used as reinforcement consequences for appropriate verbal responses.

The rate of verbalization was measured through the use of visual color reinforcement beyond the rate of the established baseline.

Firth, U. Studies in pattern detection in normal and autistic children: immediate recall of auditory sequences. Journal of Abnormal Psychology, 1970, 76(3), 413-420.

The clinical features of autism are here proposed to be caused by a deficit in the child's central cognitive processing skills resulting in a failure to perceive structure while simultaneously causing a morbid preoccupation with self-created structure. The autistic child usually possesses an excellent rote memory but has poor memory skills for other materials.

The authors tested normal and autistic children's ability to memorize words and sentences. Her findings showed that the autistic child had superior skill in rote tasks but, when compared to normal children, had lesser skill in remembering longer lists or sentences. She hypothesizes that the autistic child lacks an efficient recall strategy--a lack of efficient processing skill.

As the result of this study, the author cites the need for more research and for the development of techniques to give the autistic child necessary skills to develop a better functioning cognitive processing center.

Lettick, A. On structuring a lesson. Journal of Learning Disabilities, 1973, 6 (1), 10-15.

This paper attempts to demonstrate how lessons can be structured in a special education setting with brain damaged and autistic children based on procedures used at Benhaven Day School for Special Populations, in New Haven, Connecticut.

A step-by-step process of devising and carrying out structured lessons is detailed including the initial preparation of lesson cards, objectives for each lesson, and a checklist to aid in properly structuring the physical environment. Task structuring and behavior control are also discussed.

This report offers helpful suggestions for structuring a total classroom environment and creating a situation where learning can be facilitated.

Mahlberg, M. Music therapy in the treatment of an autistic child. Journal of Music Therapy, 1973, X, 189-193.

Music therapy was used with a six-year-old autistic boy with the goals of increasing attention span and reducing autistic behavior patterns. Clapping and rhythmic tambourine playing were used to interrupt the boy's autistic behaviors, to enable him to concentrate on an external event for progressively longer periods of time, and to learn some rhythmic speech patterns. Marching and dancing were seen as activities which demanded that the subject respond to a reality outside of himself--the structured reality of music. In unstructured sessions, Jack would pick and choose music he liked and quietly listen to it.

The author's subjective conclusions were that Jack's autistic behaviors were reduced, his attention span increased, and that he gradually became more relaxed and spontaneous with his therapist. Additional research is necessary to measure effectively and to document the results of this procedure.

Miller, A., & Miller, E. Cognitive-developmental training with elevated boards and sign language. Journal of Autism and Childhood Schizophrenia, 1972, 3, 1, 65-85.

In this study, the authors attempted to teach 19 mute-autistic children (Creak Scale) receptive and expressive use of sign and spoken language by placing them on elevated boards to facilitate body awareness to decrease stereotyped behaviors. This technique also attempts to increase purposeful directed behavior, and to teach functional language.

While on the boards, the subjects were taught signs paired with words for actions important to their situation; come, stop, go, down, etc. Data was kept on their progress and it was found that there was a high percentage of success in effective use of sign and that 7 out of 19 children produced spoken words related to their signs, with one child learning to understand and use systematic speech. Variables such as age of child contrasted to his abilities to succeed in this experiment are discussed and the article closes with a description of two case studies.

Miller, N. Language therapy with an autistic boy. Exceptional Children, 1969, 35, 555-558.

This study reports the procedures utilized in attempting to develop perceptual and language skills and impulse control in a nine-year-old, nonverbal, autistic boy. First assigned to a group nursery setting the subject had to be placed with an individual therapist for assistance with behavior problems and language. Methods used for increasing impulse control and teaching preliminary academic tasks are described.

In the child studied, all learning was found to be rote with no cognitive awareness of his own task performance or of reading content although his manipulative and reading skills improved. The subject never learned spontaneous use of language but the authors visualize the possibility of the development of communication skills in the future.

Moorehead, C. School for autistic children opened in rural Sussex. Times Educational Supplement, 1970, 2889, 11.

A brief discription of the recently opened Dedisham School for autistic children is given. Its main objective will be to provide highly individualized instruction for twenty pupils with the hopes of helping each child realize his maximum potential. To achieve this objective, staff members have been given "a free hand to use whatever methods they believe in, providing it does not upset the children." Because at the time of this article the school had just opened, the report is based mainly on projections rather than empirical facts.

Rutter, M. Autism: educational issues. Special Education, 1970, 59, 6-10.

This study discusses the various types of schooling useful for working with autistic children. Various teaching approaches and educational techniques used with special populations are examined with an emphasis on those techniques that help the child relate to others and develop language. Certain controversial issues concerning the education of the autistic child are considered.

The study closes with a plea for further evaluation of present educational programs and continued innovation of new programs.

Schechter, M. D., Shurley, J. T., Toussieng, P. W., and Maier W. Sensory isolation therapy of autistic children: a preliminary report. The Journal of Pediatrics, 1969, 74(4), 564.

Three boys with autistic defenses, i.e., no eye contact, involvement with inanimate objects, extreme autistic aloneness, etc., were treated on an experimental basis in a barren hospital room in conditions of extreme sensory isolation. The authors hypothesize that autistic defenses may rise from the inability to handle the high frequency of stimuli present in the normal world. By drastically reducing stimulation levels, the authors hoped to find these children better able to cope in the isolated environment.

The first boy was in the room for sixty-eight days, the second for forty days, and the third for seventy-four days. The procedure resulted in an improvement in each child's ability to relate to other people and to adapt to his environment. The boys were able to maintain a desire for human contact upon return to their families.

Schechter, M. D., Shurley, J. T., Toussieng, P. W., & Maier, W. J. Perceptual isolation therapy: a new experimental approach in the treatment of children using infantile autistic defenses. A preliminary report. American Academy of Child Psychiatry Journal, 1969, 8, 97.

The authors hypothesized that some children use autism as a defensive stance against incoming stimuli which they experience as overwhelming or noxious. They postulated that by placing these children in a perceptually isolated situation, the level of incoming stimuli is reduced and their need for withdrawal could decrease. Three autistic male subjects were placed in a barren hospital room where all furnishings (except for a mattress) and fixtures were removed for varying lengths of time (68 days, 40 days, 74 days). Windows were made sound proof and light proof, illumination of the room was controlled by rheostat and kept at a constant level (5 watts). A hidden electric fan provided a constant, low-level masking noise and room temperature and humidity were controlled.

The authors conclude that, even though their research design presented statistical problems, they felt that this form of isolation therapy did show a decrease in the child's dependency of his autistic withdrawal and use of elaborate defense mechanisms.

Sewell, S. The teacher's contribution to the treatment of infantile autism. Slow Learning Child, 1970, 17(2), 89-96.

The author defines the role of "teacher" when dealing with autistic children. She stresses that irrespective of the therapy being used, the teacher is responsible in some part for the child's socialization and control of personal emotions.

The teacher's role in four important areas are discussed: 1) training of perceptual discrimination, 2) training of sensory and motor skills, 3) training of social behavior, and 4) preparation for normal school education.

The author stresses the role of a teacher as a part of a total program approach that leads to the best possible care for the child.

Wenar, C., & Ruttenberg, B. A. Therapies for autistic children. Current Psychiatric Therapies, 1969, 9, 32.

The authors concerned themselves with three major therapeutic approaches; psychoanalytic, behavior, and boyd manipulation in treating autistic children. Specific reference is made to accuracy of diagnosis, description of the specific therapeutic techniques employed, therapeutic goals, and the time/effort cost of achieving the goals.

It is their premise that no one therapeutic approach is best and that responsiveness to all techniques varies widely, dependent on severity of dist bance and the presence of speech rather than the therapeutic approach used.

Whitlam, V. The autistic child. The Canadian Nurse, 1970, 66, 44-47.

The author described the major signs of autism and contrasted and compared them to the major signs of mental retardation and brain dysfunction. How autistic children are cared for at the Children's Unit at the Clark Institute of Psychiatry, British Columbia, and how their parents are included in the program are also described.

Wolf, E., Ruttenberg, B., Levin, H., & Levin, G. Song for Lolita. Music Educators Journal, 1969, 55, 50.

Lolita, an autistic child, came to the Day Care Center at the age of three. The therapy utilized at the Center was one of piano/vocal improvisations to support, encourage, and develop rhythmic and/or vocal productions. The therapist provided music which corresponded to Lolita's moods.

At five years of age, after 47 sessions, the child was singing "a la la" to a piece of music. Also, Lolita was humming to shut out all stimuli in her environment when no musical intervention was provided. The therapist considered this progress. The child was subsequently recommended and accepted for a speech therapy program.